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ORNAMENT OVER WINDOW

BUILDING *for the* CHILDS CO. *at* CONEY ISLAND*

DENNISON & HIRONS, Architects

BY F. S. LAURENCE

ONE of the most encouraging tendencies manifested of late years in building circles is the growing disposition of merchants to recognize good architecture as a distinct asset strengthening to the prestige of their business and increasing the volume of their patronage.

It is particularly significant of the strides which America is making in cultural development when an organization like the Childs Restaurant Corporation, originally conceived to furnish a series of moderate price eating places for people of average means, and whose initial instances of construction were very far from embodying any appeal to aesthetic taste, has come to regard good architectural design as an indispensable feature in their later construction. Applying the maxim that "supply follows demand" and that several recent examples of construction by the Childs Company proceeded, probably, from operation of this economic law quite as much as from altruistic motives, we derive a considerable amount of optimistic assurance for the future of that class of building which has heretofore been erected without the slightest regard for architectural merit or the aspect in general of the community where located.

A CAPITAL ON ENTRANCE COLONNADE

The completion within the past month of the Childs Restaurant building at the corner of 21st Street and Boardwalk, Coney Island, N. Y., designed by Dennison & Hirons, is a striking index of this improvement and stands as a milestone marking an enormous advance in the taste of what we are pleased to describe as the

* *See plate section for exterior views of this building.*

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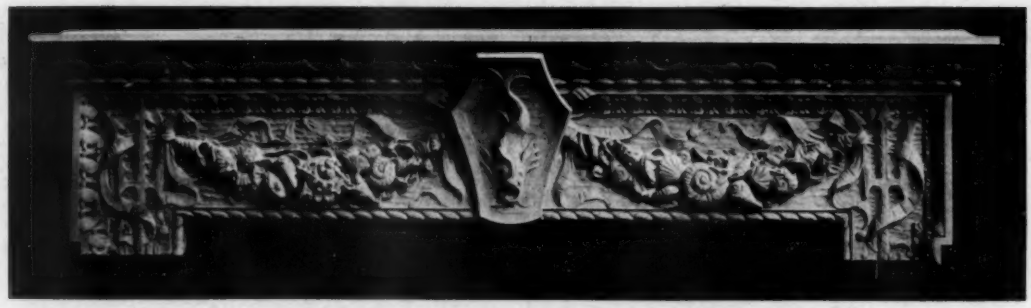
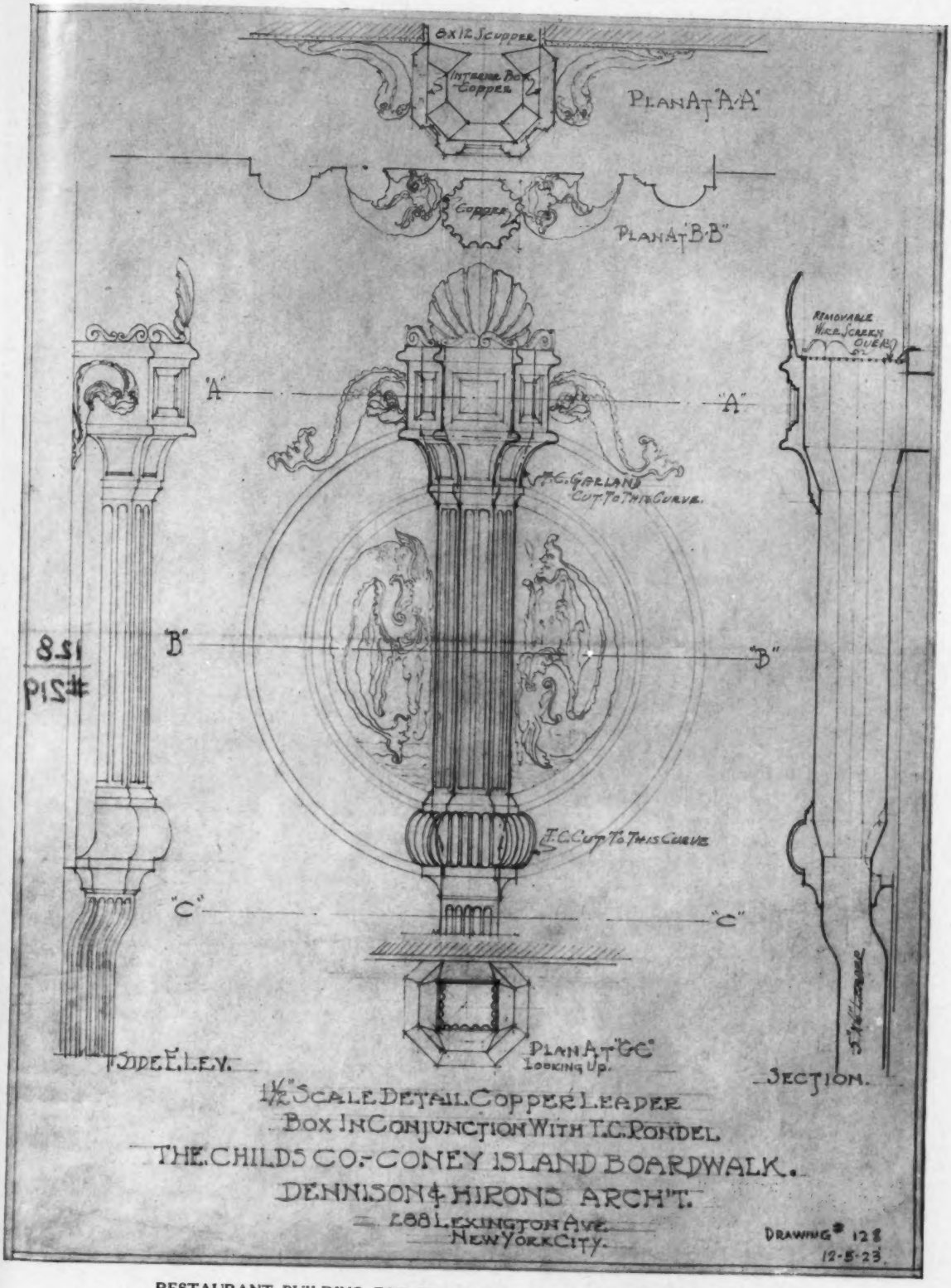


"common people" of America. For this building makes its appearance in the very heart of a section given over to about the flimsiest and most architecturally empty series of water front structures devoted to entertainment which the environs of any great city in America can present and which is patronized chiefly by the swarming multitudes of our "East side aristocracy" and outskirt industrial districts. All of which is simply to say that somewhere upon somebody's part there has existed a perception which recognized that the love of beauty and the ability to appreciate it exist among the people of humble station who form the bulk of our population, certainly in the great cities, and that a precedent has been set here in this building which presages the eventual transformation of the entire Coney Island Boardwalk into an esplanade whose ultimate aspect will gratify the eye of any beholders, whether from the lower East side or upper Fifth Avenue.

FINIAL ORNAMENT AT CORNER

The statement, of course, is to be taken with the reservation that the appropriate spirit of treatment which may be given to any popular resort of the character comprehends the lighter and less serious touch of gaiety in architectural design rather than the stately note of imposing grandeur or sober dignity. In this respect this latest instance of the work of Dennison & Hirons fulfills the happiest requirement in that the note of sober dignity is overlaid and enlivened with the most playful and amusing treatment of detail and joyously happy use of color. Drawing upon the Spanish and to some extent Italian, precedent, in the main aspects of structural design, and in the disposition and use of detail, there is carried into the latter the widest play of fancy which has associated with the stylistic feeling in ornament all the natural forms of sea life which presumably are to be found, or at one time may have existed, along the broad reaches of Coney Island's sands. Lobsters, crabs, seaweed, clam shells, even fish heads ingeniously taking the place of the traditional egg in the dart mouldings and so lifelike that they might easily have floated in with the tide from Barren Island. Then there is old Neptune himself, superbly modeled, not to mention pirate caravels and Spanish galleons with their earlier and later prototypes of marine architecture, which are typified in the series of splendid rondels encircling the entire building in the spandrel spaces over the arches.

Holding fast to precedent in the major aspects of composition there is scarcely an item in the minor detail where traditional ornament can be found in anything like its original form, aside possibly from the urns surmounting the two flanking towers and the columns of polished variegated marble supporting the terra cotta arch mouldings of the main entrance. One is thankful for such a confident and free departure into details of ornament that are quite as beautiful, intriguing, and altogether satisfying in their relations, as the purely traditional elements which have been discarded for their use. Still more for the equally joyous abandon in the use of color as a principal factor in the whole ensemble effect. This use of color, accomplished chiefly through the application of polychrome terra cotta for detail against wall surfaces of soft buff colored stucco of engaging texture, is perhaps the most satisfying feature of the whole visual effect. It cannot fail to arrest instant attention through the compulsion of its harmonious beauty and insistent demand upon the attention, without in the slightest



RESTAURANT BUILDING FOR THE CHILDS CO., CONEY ISLAND, N. Y.

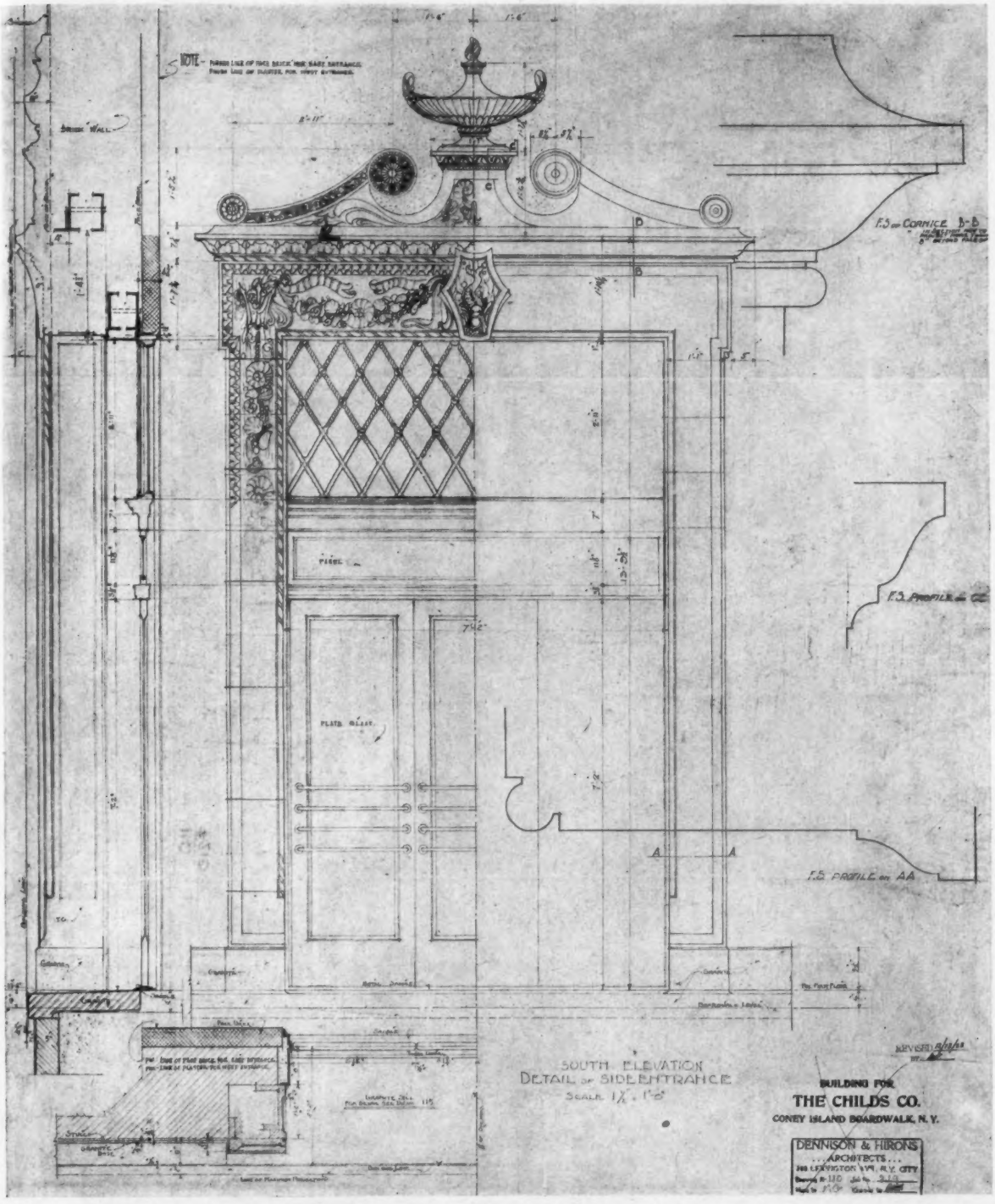
DENNISON & HIRONS, ARCHITECTS

ORNAMENT SURMOUNTING OVAL WINDOWS AT CORNERS

degree verging upon any garishness or crudity in the "quality" of the colors used or in the relationship of the various shades, hues and tints. In fact the mastery with which these have been combined into an ensemble of the most consistent and harmonious unity is an achievement upon which the architects responsible for this work may well pride themselves.

But there is something more in it than just that. The vehicles which have been used for realizing the color effects are of a nature which called for the highest degree of intelligent artist—artizanry by the producer if the whole success of such an attempt were not to end in badly disappointing f a i l u r e. That the result reflects an achievement in collaborative manufacture of the highest excellence is of immense significance to the future of color in architecture in America. The elusive nature of results in the problems of ceramic manufacture were encountered in the most trying degree under the conditions of finished effect laid down in the architects' design. The scheme of coloration in the detail involved the interflowing of different colors and glazes to produce naturalistic effects in such motives as the dripping seaweed of the large oval windows on the flanking towers, the varying colors of other forms of under-sea life and contrasting textures of wet and dry suggestion, often upon the same piece and requiring not only the most intelligent artistry in the necessary hand application but the nicest manipulation of chemical formula in the problems of glazing and firing. Bright and mat surface effects intermingle in the relief upon a ground surface of somewhat gritty texture, the varying tints extending from softly toned w h i t e to delicate shades of blue, yellow, green and tawny buff in the cartouches, arch moulds, doorway architraves and urns, reaching a climax in the more brilliant use of these colors in the rondels where touches of pure vermilion and gold glaze give an effect of the most sumptuous richness.

A TERRA COTTA CAPITAL



RESTAURANT BUILDING FOR THE CHILDS CO., CONEY ISLAND, N. Y.

DENNISON & HIRONS, ARCHITECTS

ORNAMENTAL DESIGN ON FLOWER BOXES

ONE OF THE SERIES OF MODELLED RONDELS IN THE SPANDRELS OF ARCHES

TERRA COTTA DETAILS

BUILDING FOR THE CHILDS CO., CONEY ISLAND, N. Y.

DENNISON & HIRONS, ARCHITECTS

The striking success attained in attempting a color result of such complexity in its technical aspects and such acute necessity in balancing relationships required a careful study of the chromatic problem in preliminary sketches and cartoons which were executed in pastel and then developed further in full size plaster models painted to represent exactly the desired effect by an artist, Mr. Duncan Smith, working under direction of the architects. These models were afterward tried out in the modeler's yard in positions of exposure corresponding with those to be met by the finished material when erected, the models being afterward sent to the terra cotta factory to follow in the glazing department. The general result as it appears in the color ensemble of the complete building might be described without exaggeration as a chromatic symphony in pastel shades.

A GENERAL VIEW OF THE INTERIOR

The interior of the building is in keeping with the excellent standard of taste exhibited in its exterior treatment, simplicity and dignity being preserved in the broad mass of wall surfaces enriched with a simple arch pattern in delicate blue stencil and a series of rondels of symbolic and pictorial motives striking a rich focal color note. An arched ceiling in delicate but rich plaster modeling completes an aspect quite in keeping with the best standards of restaurant design. Space does not permit a more extended description of the interior, the primary concern of this article being with the less usual aspects of exterior treatment presented in the use of color and materials employed there. Just why the owners of this building should have chosen to favor Coney Island's boardwalk with such a gem of successful colored architecture instead of Fifth Avenue or Broadway and just why our merchants and others catering to popular patronage in one form or another should have failed as yet to see the enormous asset lying in a similar treatment for their store fronts, especially where ground rents favor whole block fronts, is one of the inscrutable mysteries which probably find an answer in the word "conservatism" construed as an obsession in its relation to public reaction. Perhaps we have all of us been afflicted heretofore with a bit of the same malady.

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The TABLET *to* WREN

THE ARCHITECT, of London, presents in its news columns of a recent issue, the following account of the unveiling of the bronze tablet presented by the Architectural League of New York to St. Paul's Cathedral:—

"The tablet," states *The Architect,* "is fixed to the wall in the gallery over the north aisle, and takes the form of a bronze plaque with a surround of goldenrod, and oak leaves entwined."

A short dedicatory service was conducted by Dean Inge, and afterwards Lord Balcarres unveiled the tablet in an address which was of unusual merit and eloquence. It was, he said, a great city, and in imagination they carried their minds back to that same city in the days of the genius of Wren. He knew the city decimated by plague, shattered by death, devastated by fire, and from the ashes of its despair he raised this giant monument to the hope of immortality. Many generations had passed through the life of the Cathedral, and each had paid its tribute of praise, yet their words were but rippling waves passing over the unfathomable depths of his greatness. Indeed, so great a master was he that one might almost say of him, as was said of the Greatest of all and His followers, "He went before and

DESIGNED BY ALFRED C. BOSSOM,

CHAIRMAN, FOREIGN EXHIBITION COMMITTEE, A. L. OF N. Y.

testimony to the strength and vitality of Sir Christopher Wren's influence, and though they well recalled the famous admonition against a memorial to his achievement, and the plea that his work rather than his personality should carry his recollection onwards, they might direct their minds to his memory on this spot, where "Thro' the long drawn aisle and fretted vault the pealing anthem swells the note of praise." They stood that day in the heart of the throbbing life of that they were amazed, and as they followed they were afraid." In that dark hour of their history the genius of Wren took wing, hovering like some great spirit over its ashes and desolation, surveying its ruins, and conceiving its massive reconstruction. Creation followed creation, each excelling its neighbor in strength and grandeur, in grace and vitality, and so the city of death became the envy of the world of architecture.

PORTLAND CEMENT STUCCO*—Part I

BY SAMUEL WARREN,† *Associate Member American Society of Civil Engineers*

STUCCO is today as it has been for centuries, a type of construction rather than a decorative medium. It is only quite recently that in this country it was realized that both the functions could be combined. Basically, it is a covering material applied over some type of wall construction to give it ability to withstand weathering, such as the soft limestone of southern Europe or the adobe of southwestern states of this country. A slight departure from this function of the material has been its use in this country when it is applied over lath on exteriors of houses. This makes a wall that is but a weatherproof coating supported by the same framework that takes the loads of the building. If the best of workmanship and materials is used, the results are satisfactory.

The use of stucco in this country is far from being a passing fancy. Its widespread adoption is due to fundamental economics.

A moment's thought will show that Europe stopped the use of all wood house construction centuries ago as forests were depleted. We face the same situation in this country today. We turn to masonry construction as did Europe but Europe had the advantage of cheap brick and stone. Except in favored localities, we cannot so economically use these materials. We are turning to a wall construction of great durability and good insulating properties. It is now costing the same in some localities as all frame construction. It is slowly but surely approaching this balance in others except where lumber is extremely abundant. For this reason, the use of stucco will be more widespread tomorrow than it is today.

The composition of Portland cement stucco is simple: Portland cement, sand, hydrated lime and water. When applied over masonry the object is to have it bound securely to the masonry, becoming an integral part of it. When applied on metal lath, it is a sheet of concrete reinforced by the lath. The lath should never be considered as just roughness on which to hang the stucco, but as much as reinforcement as that in a concrete wall. For this reason, much of the success of stucco on lath depends upon the proper application of the lath, particularly the fastening of the laps so that the sheets become one homogeneous layer over the whole structure.

Design—Whenever the design of the structure permits, an overhanging roof or similar projection is recommended to afford protection to the stucco. Stuccoed copings, cornices and other horizontal surfaces should be avoided whenever possible. All exposed stuccoed surfaces should shed water quickly, and whenever departure from the vertical is necessary as at water tables, belt courses, and the like, the greatest possible slope should be detailed. Stucco should not be run to the ground whenever other treatment is possible. Should the design of the structure require this treatment, the backing should be of tile, brick, stone, or concrete, providing good mechanical bond for the stucco, and should be thoroughly cleaned before plastering. Unless special care is taken to thoroughly clean the base and each plaster coat from dirt and splash before the succeeding coat is applied, failure of the stucco may be expected.

Flashing—Suitable flashing should be provided over all door and window openings wherever projecting wood trim occurs. Wall copings, cornices, nails, chimney caps, etc., should be built of concrete, stone, terra cotta, or metal with ample overhanging drip groove or lip and watertight joints. If copings are set in blocks with mortar joints, continuous flashing should extend across the wall below the coping and project beyond and form an inconspicuous lip over the upper edge of the stucco. Continuous flashing with similar projecting lip should be provided under brick sills. This flashing should be so installed as to insure absolute protection against interior leakage.

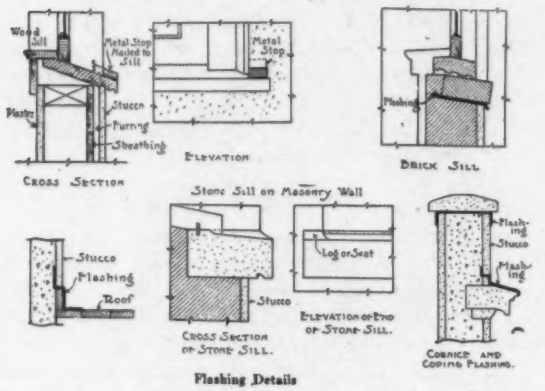
EDITOR'S NOTE:—This is the first of a series of four articles by Samuel Warren, on Portland Cement Stucco. The application of Stucco to various surfaces is discussed and a proper method described. In a succeeding article Mr. Warren will illustrate, from the viewpoint of the craftsman the manipulative methods employed to secure those various qualities of texture to which Cement Stucco readily lends itself. A concluding article will exhaustively present the subject of Color in Stucco and explain just how the best and most lasting effects may be secured. The third and fourth articles will be profusely illustrated.

* *This series of articles will be devoted to the proper application of Portland cement stucco and its decorative possibilities.*

Most of the data in this section is from the report of the Committee on Concrete Surfaces of the American Concrete Institute, a committee composed of stucco contractors, architects, cement manufacturers and officials of the U. S. Bureau of Standards.

† *Manager, ATLAS-WHITE Department, The Atlas Portland Cement Company.*

Cornices set with mortar joints should be provided with flashing over the top. Sills should project well from the face of the stucco and be provided with drip grooves or flashing as described above for brick sills. Sills should also be provided with stools or jamb seats to insure wash of water over



Flashing Details

the face and not over the ends. Special attention should be given to the design of gutters and downspouts at returns of porch roofs where overflows will result in discoloration and cracking. A 2-in. strip should be provided at the intersection of walls and sloping roofs and flashing extended up and over it, the stucco being brought down only to the top of the strip.

Preparation of Original Surface—All roof gutters should be fixed, and downspout hangers and all other fixed supports should be put in place before the plastering is done, in order to avoid breaks in the stucco.

Metal lath should be stopped not less than 12 in. above grade to be free from ground moisture.

All trim should be placed in such manner that it will show its proper projection in relation to the finished stucco surface, particularly in overcoating.

Stucco On Masonry Walls

Poured Concrete—Stucco is applied directly to poured concrete walls. They should first be prepared by thoroughly roughening the surface. This can be done by scrubbing with a very stiff wire brush when the concrete is less than twenty-four hours old or by hacking the surface with a stone hammer or chisel. This means exposing a clean fresh surface and not just making widely separated hack marks in the surface. There are also patented materials on the market which will prepare the surface for stucco.

This preparation of the surface is necessary as all poured concrete has a layer of laitance or dead materials on the surface that will ordinarily kill the bond. Do not use a bonding material. None is needed.

Wet down the concrete before applying the stucco.

Two coats are sufficient; the base coat to even up the surface and then the finish coat.

Concrete Block—Dry tamp block need no preparation except the wetting down of the wall before applying the stucco. The suction will draw the mortar into the pores of the block and give a perfect bond. Do not cover the exterior of the block with a bonding material as none is needed and it will prevent a bond instead of giving one.

Wet poured block should be given a surface like poured mass concrete, either when the block are made or after they are in place.

Always use three coats on block to prevent the joints from showing through.

Brick—Portland cement stucco will bond directly to the wall if made of ordinary common brick as long as the surface is clean as is common in ordinary work. Joints may be raked out but it is not necessary. Apply the stucco directly to the brick in three coats.

Hollow Clay Tile—Apply the stucco in three coats directly to the tile. Do not use a bonding material or asphalt paint as it will usually ruin the stucco. Wet down the wall thoroughly to prevent excessive absorption.

Stucco Over Sheathing

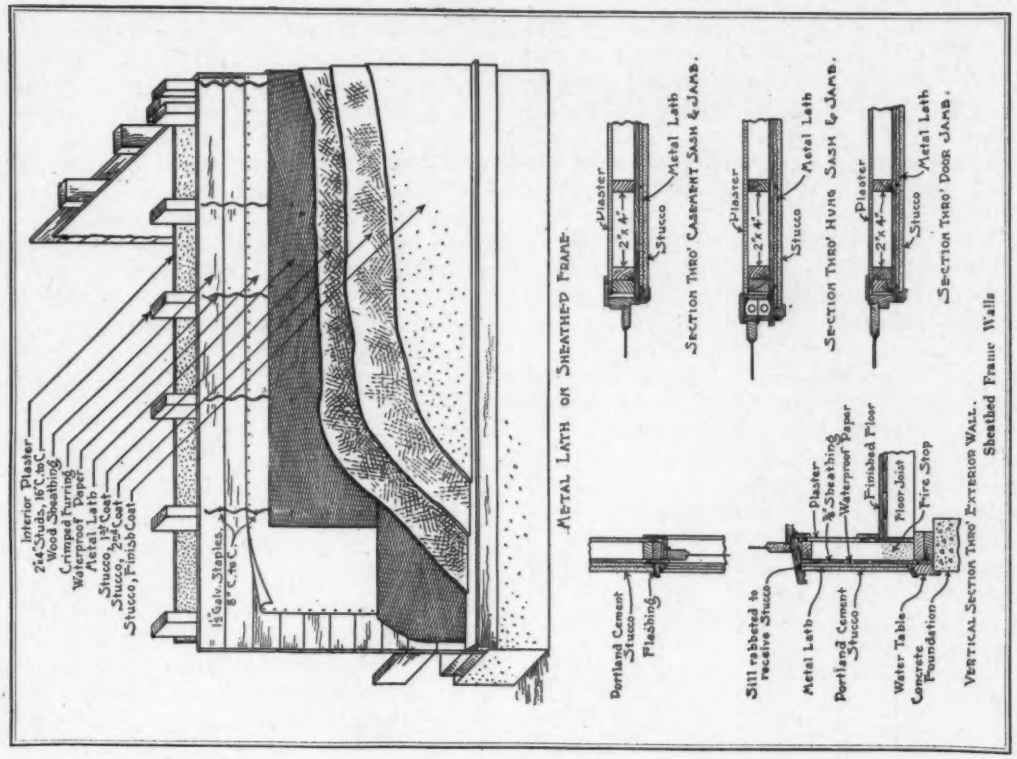
This is the most common method but is not as good construction as that known as back-plastered construction.

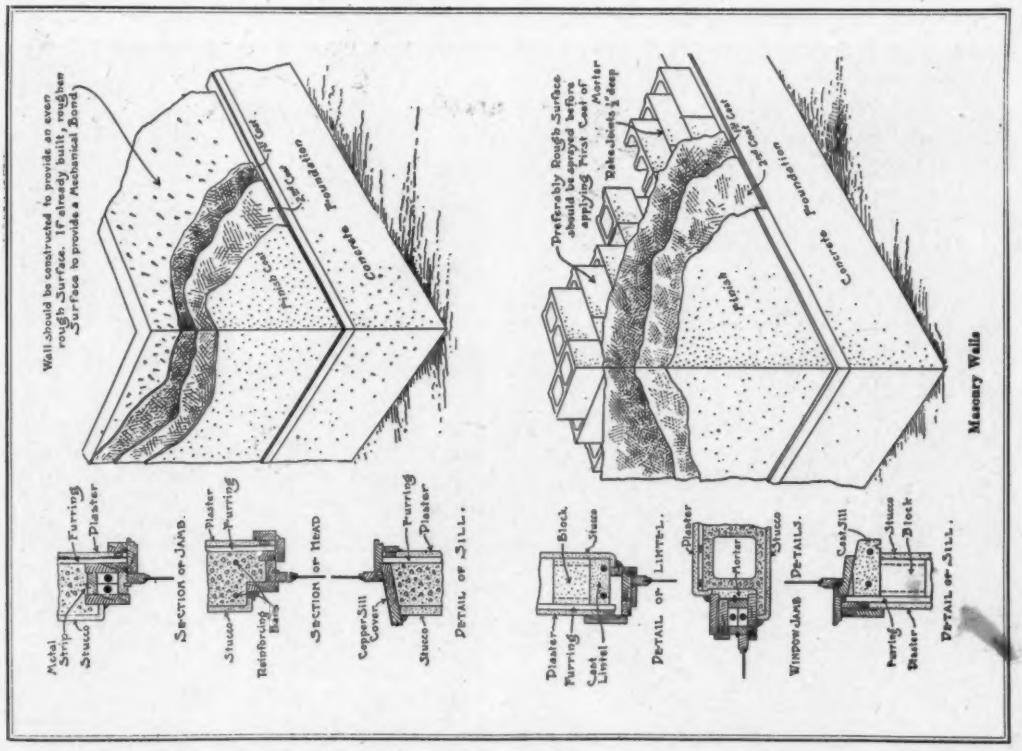
The sheathing by its warping has a tendency to cause cracking. Its insulating value is relatively small as is also its bracing action.

Framing—Studs spaced not to exceed 16 inch centers should be run from foundation to rafters without any intervening horizontal members. The studs should be tied together just below the floor joists with 1 x 6 inch boards which should be let into the studs on their inner side, so as to be flush and securely nailed to them. These boards will also act as sills for the floor joists, which, in addition, should be securely spiked to the side of the studs. The corners of each wall should be braced diagonally with 1 x 6 inch boards let into the studs on their inner side, and securely nailed to them.

Sheathing—The sheathing boards should not be less than 6 inches nor more than 8 inches wide, dressed on one or both sides to a uniform thickness of ⅞ inch. They should be laid horizontally across the wall studs and fastened with not less than two 8d nails at each stud.

Sheathing should be laid horizontally and not diagonally across the studs. The stucco test


Interior Plaster
2"x4" Studs, 16" c. to c.
Wood Sheathing
Crimped Furring
Waterproof Paper
Metal Lath
Stucco, 1st Coat
Stucco, 2nd Coat
Stucco, Finish Coat
1½" Galv. Staples, 8" c. to c.
Metal Lath or Sheathed Frame
Plaster
2"x4"
Stucco
Metal Lath
Section Thro' Casement Sash & Jamb.
Section Thro' Hung Sash & Jamb.
Section Thro' Door Jamb.
Portland Cement Stucco
Flashing
Sill rabbeted to receive Stucco
Plaster
½" Sheathing
Waterproof Paper
Finished Floor
Floor Joist
Fire Stop
Metal Lath
Portland Cement Stucco
Water Table
Concrete Foundation
Vertical Section Thro' Exterior Wall.
Sheathed Frame Walls


Wall should be constructed to provide an even rough surface. If already built, roughen surface to provide a Mechanical Bond
Furring
Plaster
Metal Strip
Stucco
Section of Jamb.
Reinforcing Bars
Section of Head
Copper Sill Cover
Detail of Sill.
Preferably Rough Surface should be sprayed before applying First Coat of Mortar
Rake Joints ½" deep
Concrete foundation
Brick
Block
Stone
Plaster
Furring
Cast Lintel
Detail of Lintel.
Mortar
Details.
Window Jamb
Cast Sill
Detail of Sill.
Masonry Walls

panels erected at the Bureau of Standards in 1915 and 1916 have demonstrated conclusively that diagonal sheathing tends to crack the overlying stucco by setting up strains in the supporting frame.

The use of wood lath is not recommended, because of the extreme difficulty in securing proper application of the stucco. In northern climates particularly, its use will quite invariably lead to unsatisfactory results.

Lath—Metal lath should be galvanized or painted expanded lath, weighing not less than 3.4 lbs. per square yard.

Wire lath should be galvanized or painted woven wire lath, not lighter than 19-gauge, 2½ meshes to the inch, with stiffeners at 8 inch centers.

Application of Lath—Lath should be placed horizontally, driving galvanized staples 1¼ inch x 14-gauge not more than 8 inches apart over the furring or stiffeners. Vertical laps should occur at supports and should be fastened with staples not more than 4 inches apart. Horizontal joints should be locked or butted and tightly laced with 18-gauge galvanized wire.

Corners—The sheets of metal lath should be folded around the corners a distance of at least 3 inches and stapled down as applied. The use of corner bead is not recommended.

Furring—Furring should be galvanized or painted ⅜ inch crimped furring not lighter than 22-gauge, or other shape giving equal results, should be fastened over the sheathing paper and directly along the line of the studs, using 1¼ inch x 14-gauge staples, spaced 12 inches apart. The same depth of furring should be adhered to around curved surfaces, and furring should be placed not less than 1½ inches nor more than 4 inches on each side of and above and below all openings. Wood furring may also be used. If self-furring lath is used, then the separate furring can be omitted.

Coats—The stucco is then applied in three coats. The base and second coats should both be thoroughly scratched. The second coat can be applied over the base as early as the succeeding day, but it is best not to put the finish coat on for at least a week. The total thickness of the stucco is at least one inch, from the outside face of the lath.

Hair—Use hair or fibre only in the first coat and only in sufficient quantity to prevent the mortar from dropping down back of the lath. Too much hair will prevent the lath being embedded thoroughly in the stucco.

(*To be continued*)

EDITORIAL COMMENT

A **UNIVERSAL LANGUAGE** is a phrase that is commonly used to characterize architecture as well as the other fine arts. The validity of the idea is based on the essential need of architecture for human existence. If we accept this hypothesis as true, it might reasonably be expected that every person engaged in such an essential work will have a commonness of feeling, aspiration, intent and fraternity. This should be, regardless of the political limitations of country, nationality, race or creed. Conditions, such as war, may interrupt temporarily, between groups of architects, the interflow of the universality of efforts—that is something that American architects, or other architects, either as individuals or organized, cannot control or prevent. War originates in political or economic conditions and is absolutely not *ex cathedra* to architects and architecture.

The fact that a war has existed between two nations does not detract from the merits of the architecture of either country any more than it destroys the harmony of music written by the composers of both countries. A meeting of brains, culture, energy and the desire to serve, must establish a fraternal intercourse. If it does not so result, is it not caused by a provincialism, a narrowness of view and a lack of that broad humanism which is the only inspiration of artistic expression?

International architectural relations are desirable because they benefit all of the parties who participate. No one group can enter into and maintain a state of isolation without incurring a distinct loss to themselves.

Do American architects speak the universal language of architecture with all that it implies or do they speak a *patois?*

* * *

STANDARDIZATION is very desirable, within certain limits, and by it great economies are effected in building construction without in any way detracting from the permanence, strength or usability of the building. The elements that can be standardized are, by far, the greater portion of the things used for this purpose. Anything which would tend to standardize those things which are within the domain of artistic design should be opposed. In some lines of manufacturing, standardized articles and materials of an ornamental character are made and extensively used. This produces a monotony of architectural expression throughout all sections of the country which has a deadening effect on individual designing. The important work of standardization should receive the earnest attention of architects.

Until within a few years ago, many organizations existed for the purpose of establishing standards, often several in the same or allied professions and industries, resulting, in many instances, in a confusing overlapping of specifications. In 1918 active work was begun by the American Engineering Standards Committee which is composed of representatives of twenty-three national organizations and U. S. governmental departments. The standards pertaining to the building industry are grouped principally under the division of civil engineering and of the 152 projects in hand by the A. E. S. C., 12 pertain more particularly to building construction.

Eight per cent of the total number of projects under way is devoted to the building industry, which appears to be too small a ratio considering its importance. Architecture is represented in the A. E. S. C. by the membership of the American Institute of Architects in the person of one representative. The financial participation in the support of the Committee limits its representation. In view of the great importance of this work, it appears that architecture should have a larger representation, very carefully selected.

CORRESPONDENCE

To the Editors,
THE AMERICAN ARCHITECT:

SOME six months ago, representative architects who are practicing wholly or in part on Staten Island, expressed a desire to have all the architects on the Island get together for the purpose of effecting closer acquaintance and to bring about a better understanding of local building conditions; as well as for effective co-operation in the matter of the proper enforcement of the building laws; and a better acquaintance with loaning agencies on the Island.

At a meeting of fifteen architects it was decided to form an Association of Staten Island Architects and later, if possible, to form a Staten Island Chapter of the Institute. Several meetings were held in which local and professional matters were discussed and it was decided to have a dinner and to invite representatives from each of the Building and Loan Associations on the Island, some fifteen in number, and the repre-

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sentatives of the two savings institutions who make extensive building loans.

Robert D. Kohn of New York accepted an invitation to make the address of the evening on this occasion. The object of the dinner was to have these representatives meet all of the architects of the Island and to secure an interchange of thought on the subject of good or improved architecture in the new buildings being erected, on which loans were made. It was represented to our guests that the better a building was designed and constructed, under a competent architect's direction, the better the security would be, and that they would confer a distinct and lasting benefit on the community by insisting, through their respective organizations, that loans only be granted on plans well designed and clearly drawn by competent architects, but not necessarily by our own members; and that they would further benefit their borrowers, and incidentally themselves, by insisting that the construction of the buildings be superintended by the architects who designed them and not left solely to the builders, whose aims might be selfish and at the expense of the borrower and the lender.

Mr. Kohn's well considered address was most helpful. The results of this conference are already apparent, for the loaning agencies are now requiring drawings and specifications to be well made and are favoring loans where buildings are well designed. They are also insisting on better and more adequate superintendence. The Staten Island Savings Bank has issued to all its borrowers for new building construction, a standard set of specifications for the ordinary dwellings, which must be lived up to in order to obtain payments on loans. Another evidence of the good effect of the Association and the conference is that local contractors are now employing architects to do their designing instead of making their own drawings. They realize they can more easily obtain loans with good plans and specifications and the backing of competent architects than if they submit their own "half-baked" efforts. We are, as an association, delighted with this local encouragement of our loaning friends, who are the biggest factor in our community building.

We also had an exhibition of local work at the Staten Island Institute of Arts and Sciences, which, for an initial attempt, was very successful. Our space was limited but the exhibit creditable and enthusiastically received. The exhibition resulted in queries for new work to some of our architects, from entirely unexpected sources. The exhibition lasted for a month and was well attended and we expect to have another next Spring. During the coming Fall we shall perpetrate persistent publicity with a view to educating our public to the need of better architecture for Staten Island.

CARL F. GRIESHABER
New York City

EDITORS' NOTE:—While Staten Island is a part of Greater New York, constituting the Borough of Richmond, its geographical location, in a sense, sets it apart from the greater city. A very well directed building movement has been going forward there and owing to the work of the efficient group of architects that are located on Staten Island a marked improvement has taken place. But owing to lack of organization among Staten Island architects, and between them and the building interests, it was believed that better results might be obtained if the architects, the builders and the loaning companies could get together on a basis of common understanding. At our request, Mr. Grieshaber has written a communication, which is printed above, setting forth the steps that have been taken to co-ordinate the various building interests. From personal observation we can state that a large amount of constructive effort has resulted in a change of conditions for the better and the value of the architect's services in the upbuilding of the community emphasized in the most practical manner.

We recommend the action of the Staten Island architects to other groups wherever found, as a practical movement for good accomplishment.

A PANEL IN POLYCHROME TERRA COTTA

RESTAURANT BUILDING FOR THE CHILDS CO., CONEY ISLAND, N. Y.

DENNISON & HIRONS, ARCHITECTS

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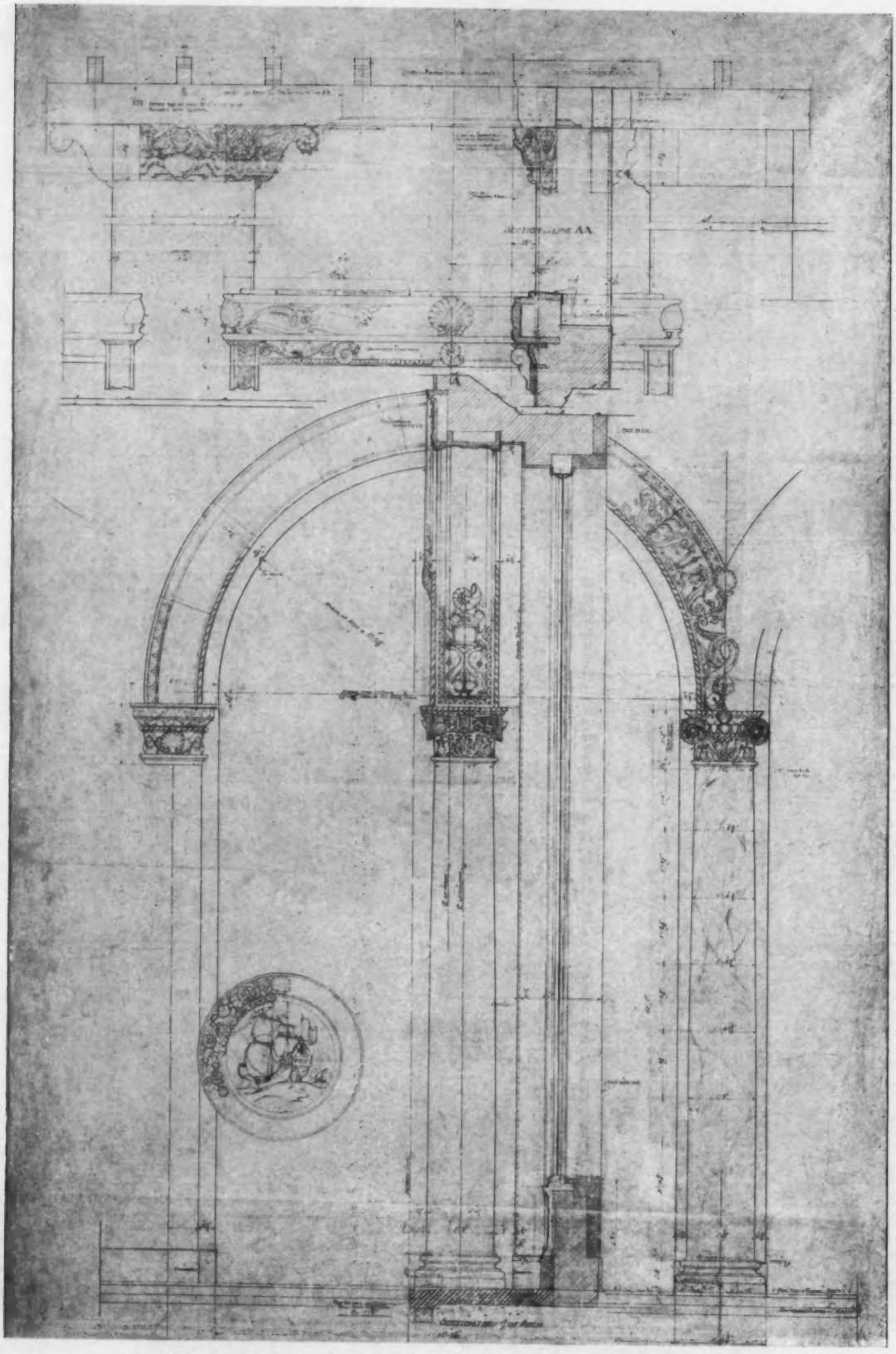

RESTAURANT BUILDING FOR THE CHILDS CO., CONEY ISLAND, N. Y.

DENNISON & HIRONS, ARCHITECTS

RESTAURANT BUILDING FOR THE CHILDS CO., CONEY ISLAND, N. Y.

DENNISON & HIRONS, ARCHITECTS

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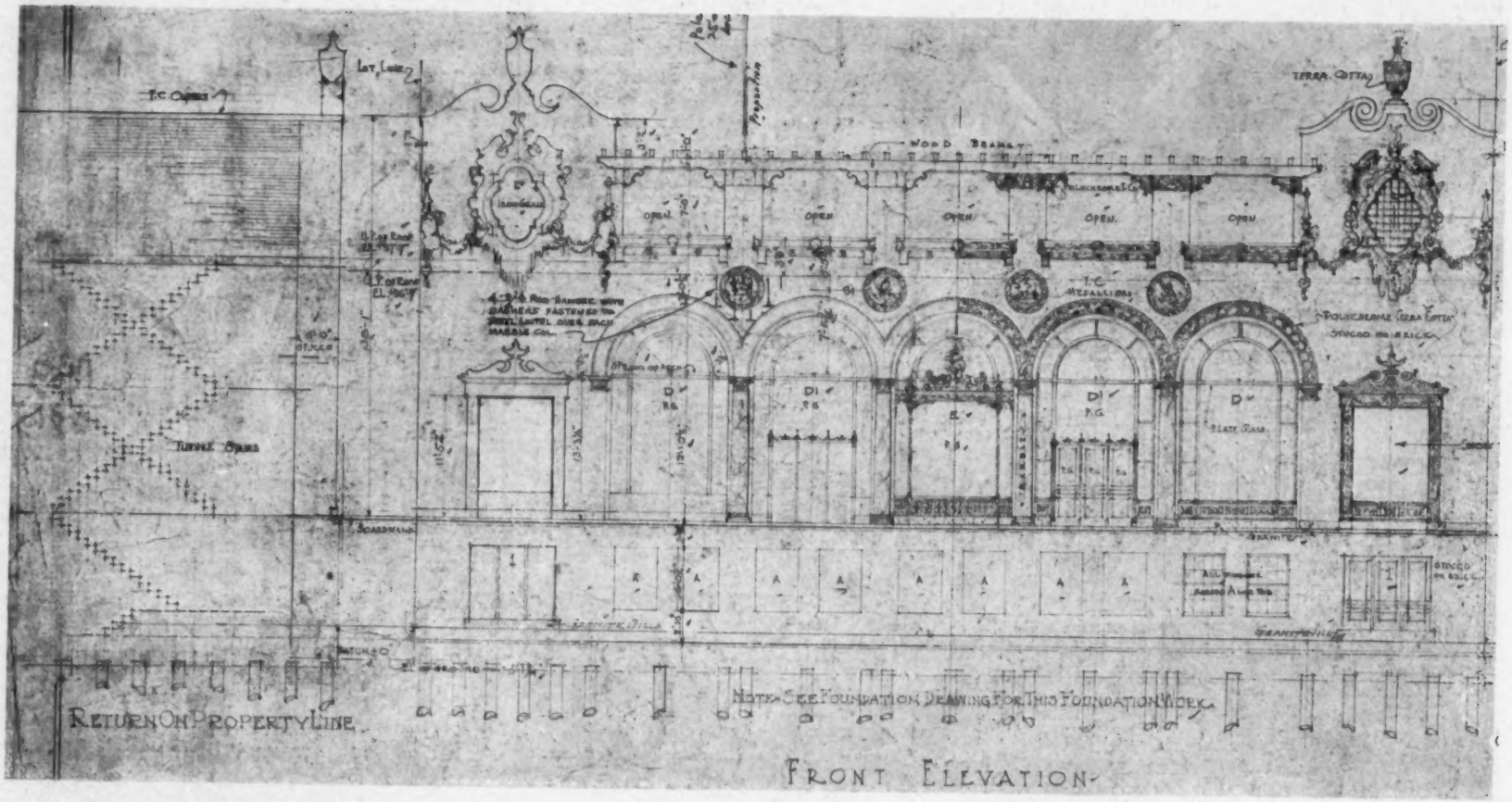

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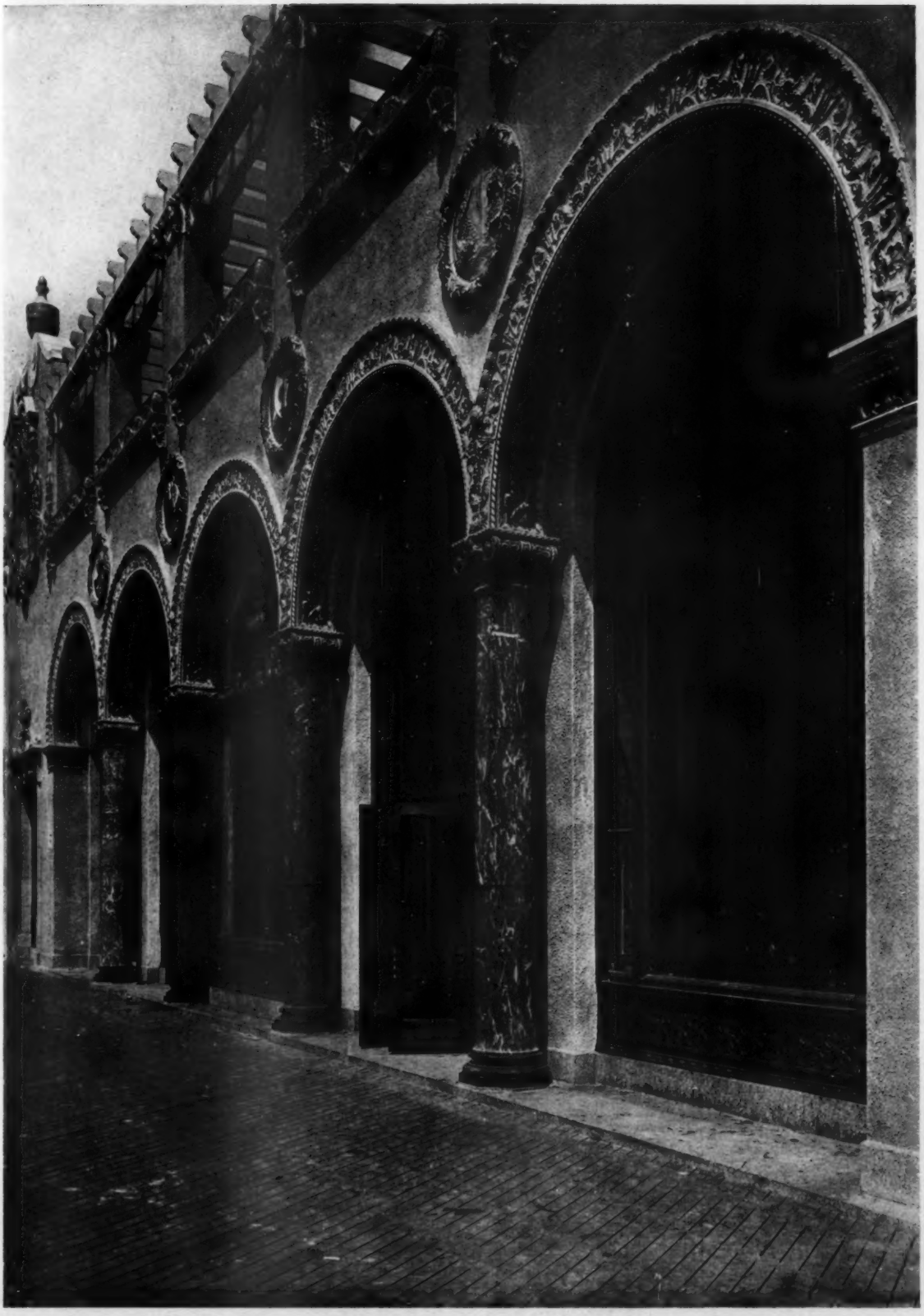

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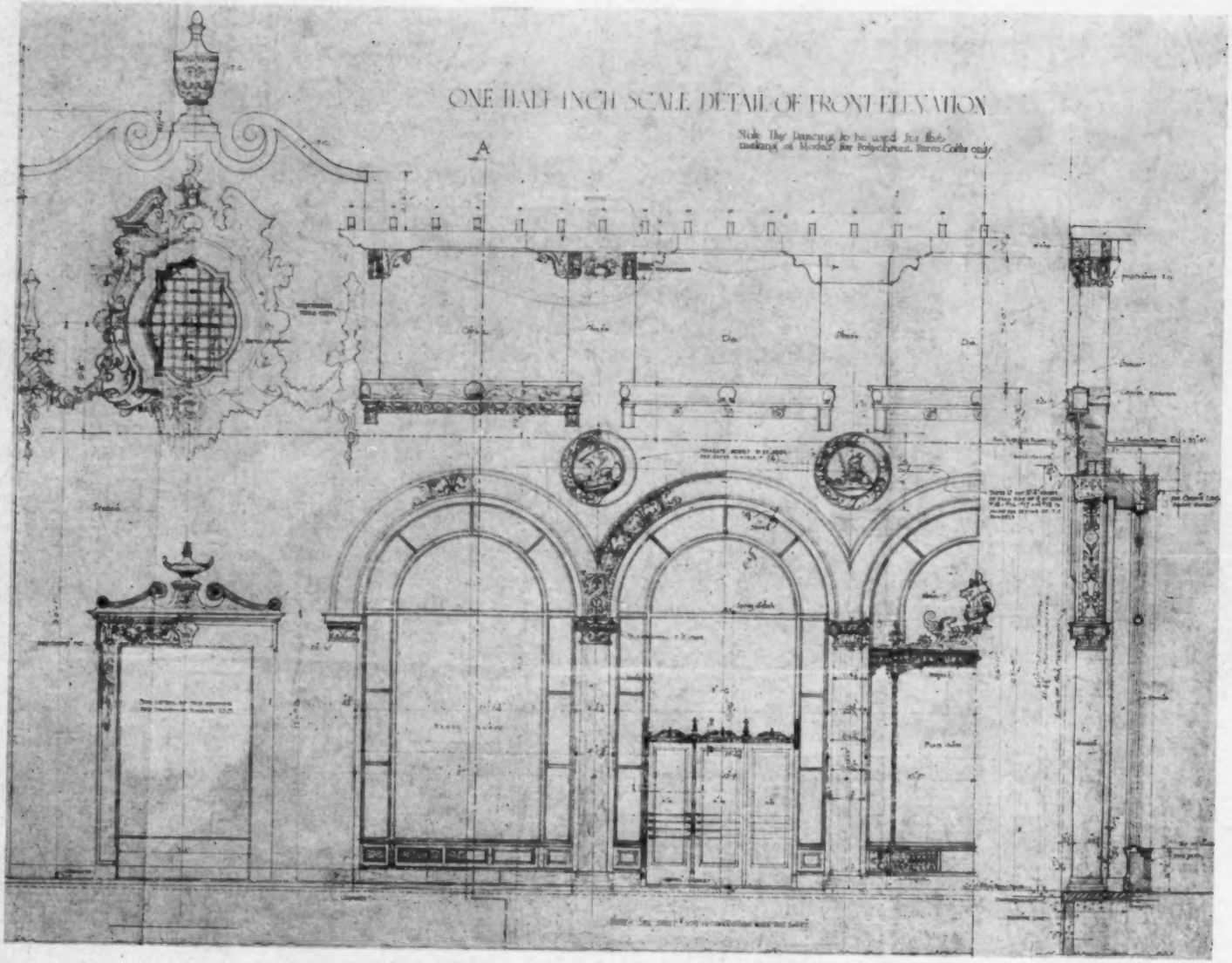

RESTAURANT BUILDING FOR THE CHILDS CO., CONEY ISLAND, N. Y.

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LIBRARY BUILDING, TEACHERS COLLEGE, COLUMBIA UNIVERSITY, NEW YORK

ALLEN & COLLENS, ARCHITECTS

(Plan on back)

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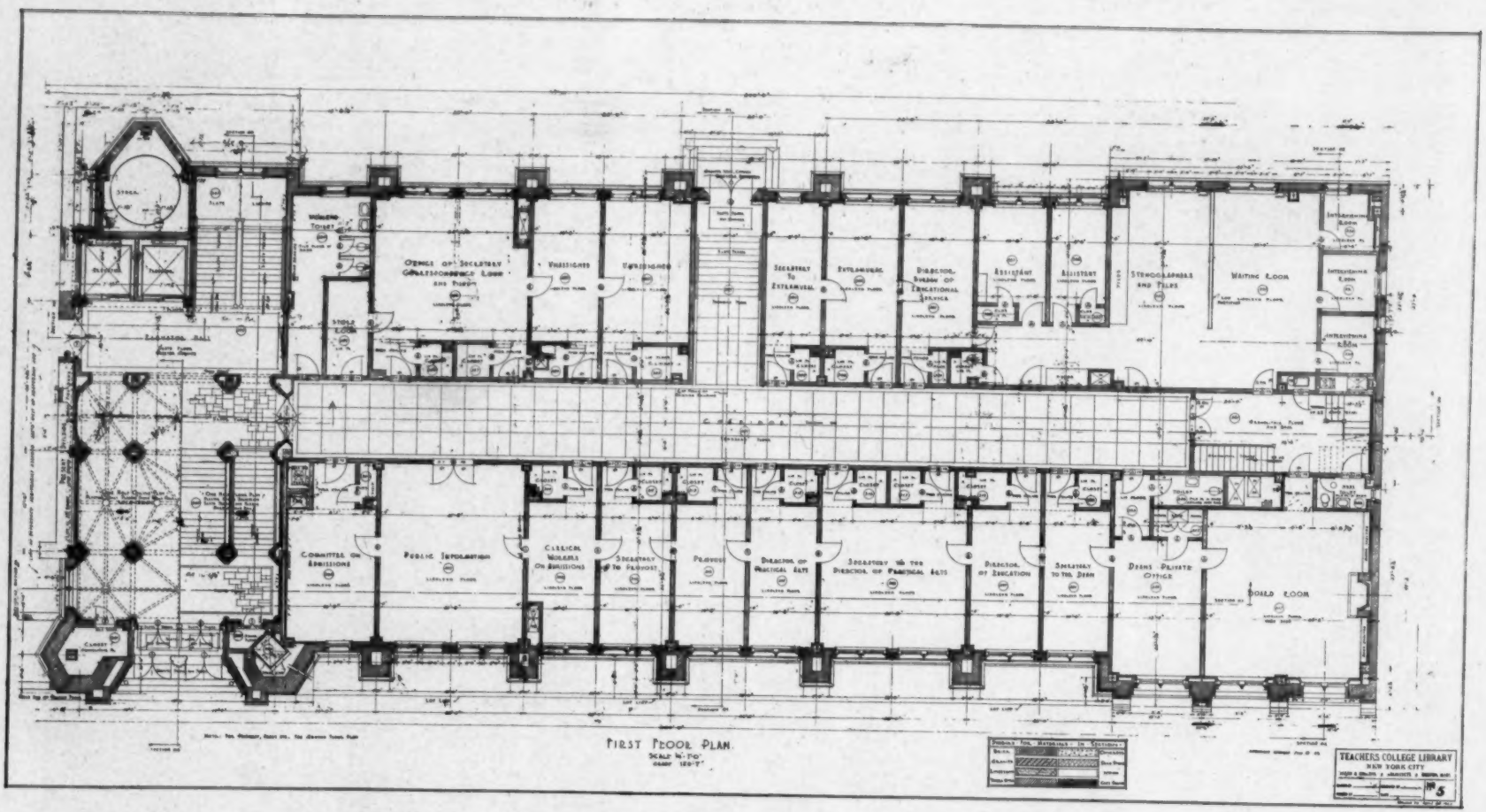

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ALLEN & COLLENS, ARCHITECTS

LIBRARY BUILDING, TEACHERS COLLEGE, COLUMBIA UNIVERSITY, NEW YORK

ALLEN & COLLENS, ARCHITECTS

(Plan on back)

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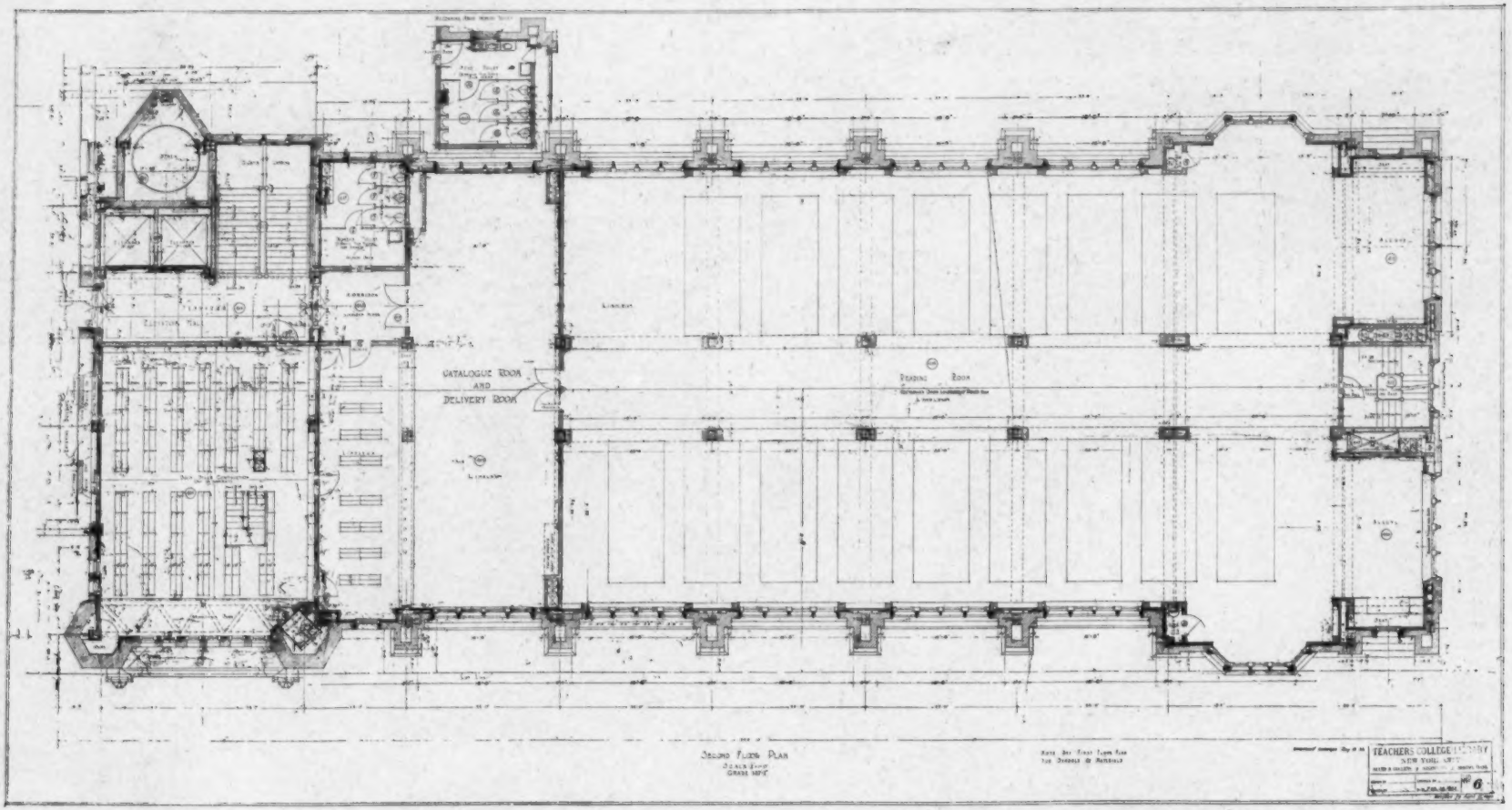

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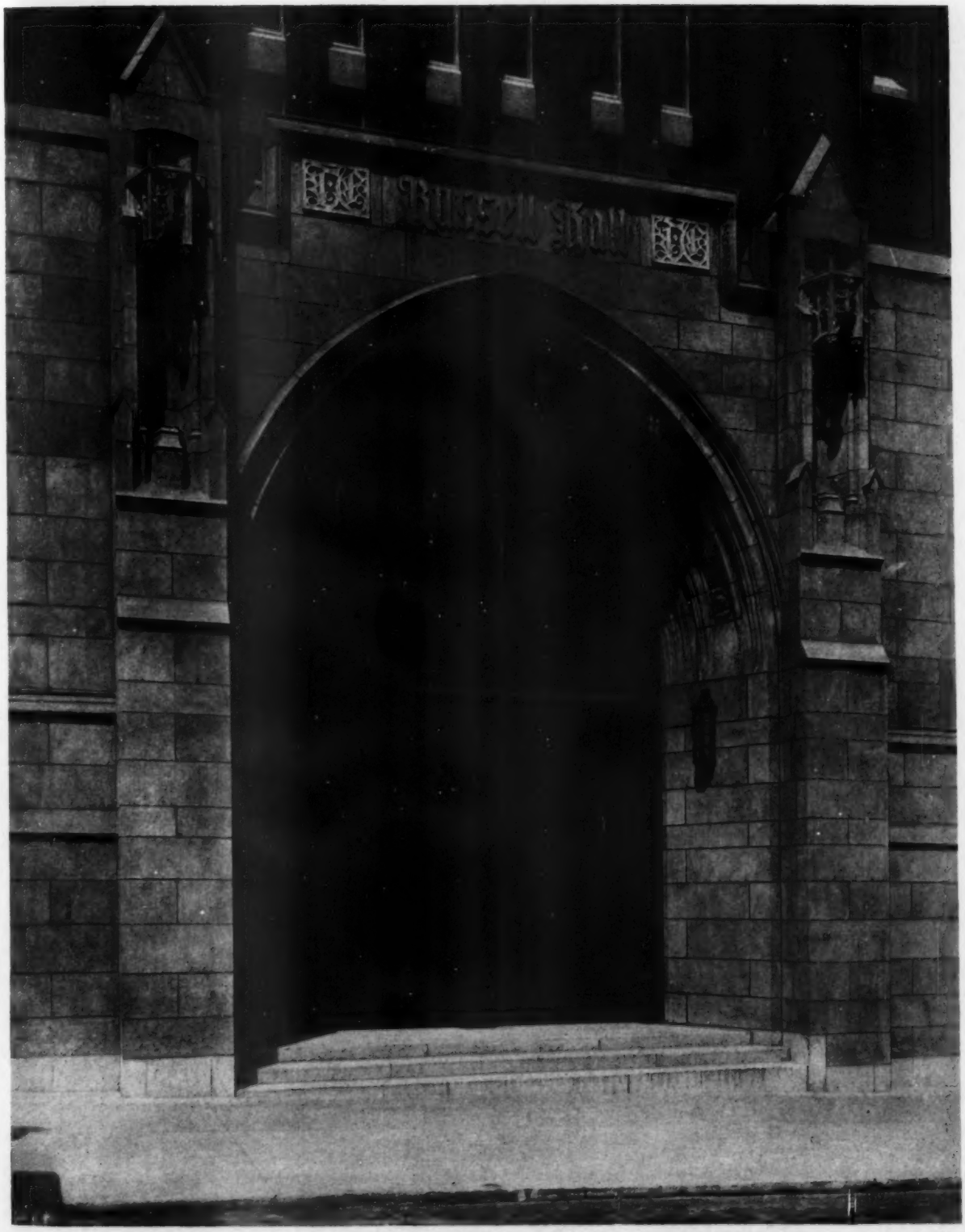

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ALLEN & COLLENS, ARCHITECTS

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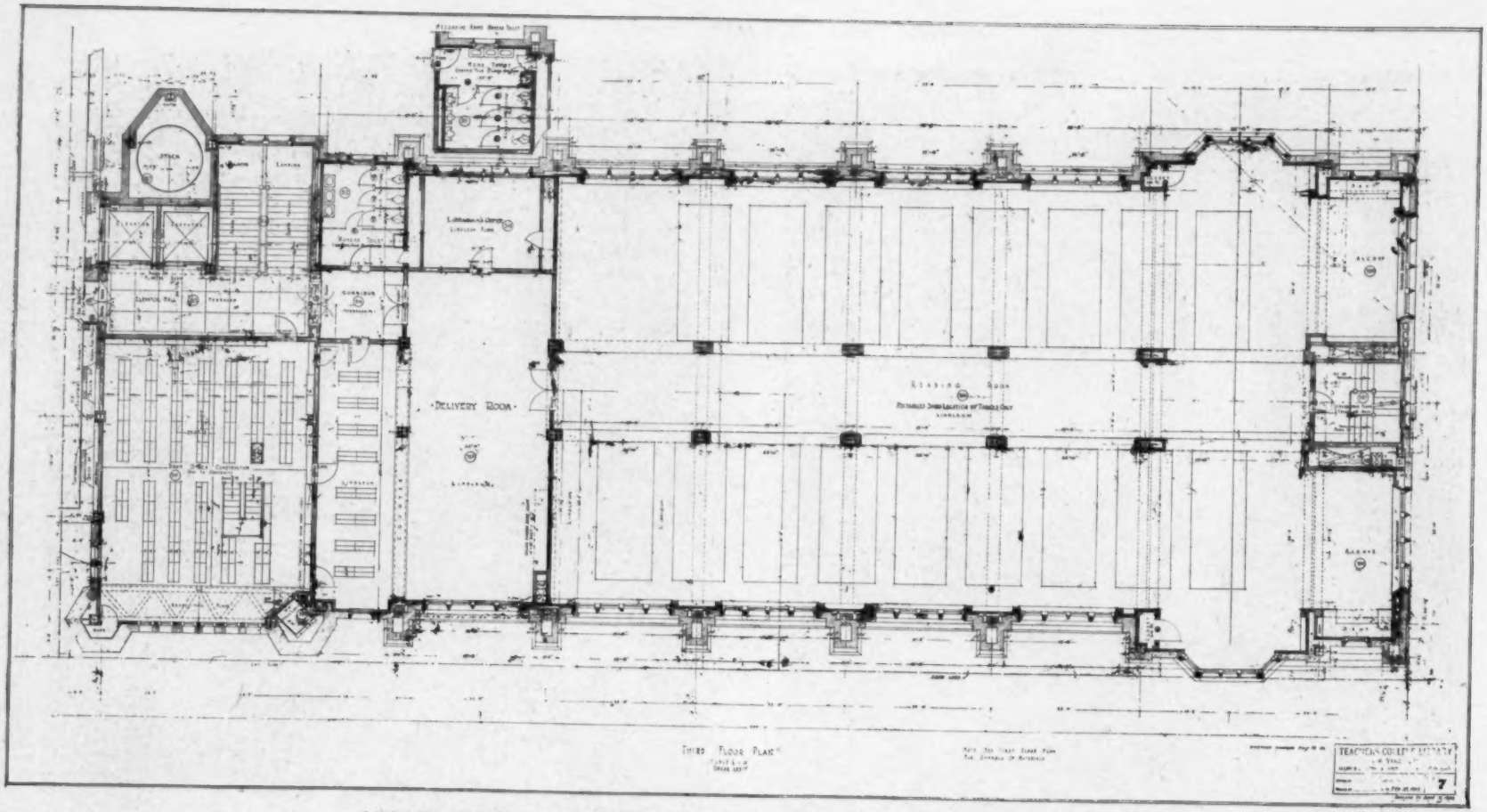

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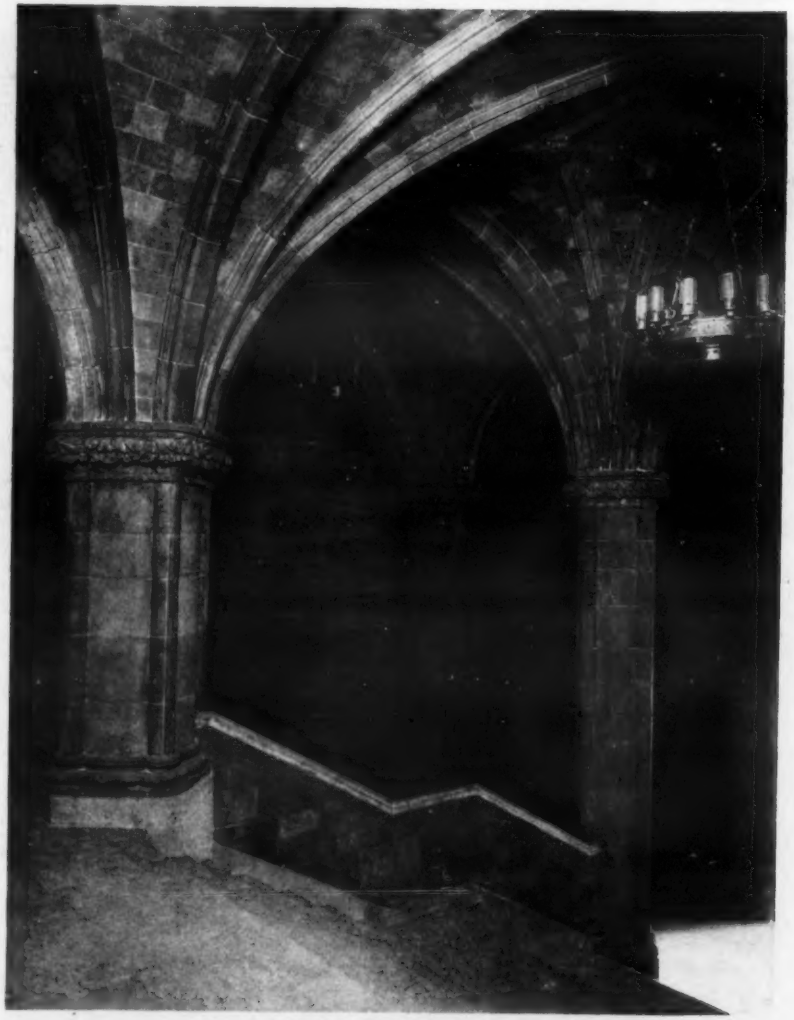
ALLEN & COLLENS, ARCHITECTS



LIBRARY BUILDING, TEACHERS COLLEGE, COLUMBIA UNIVERSITY, NEW YORK

ALLEN & COLLENS, ARCHITECTS

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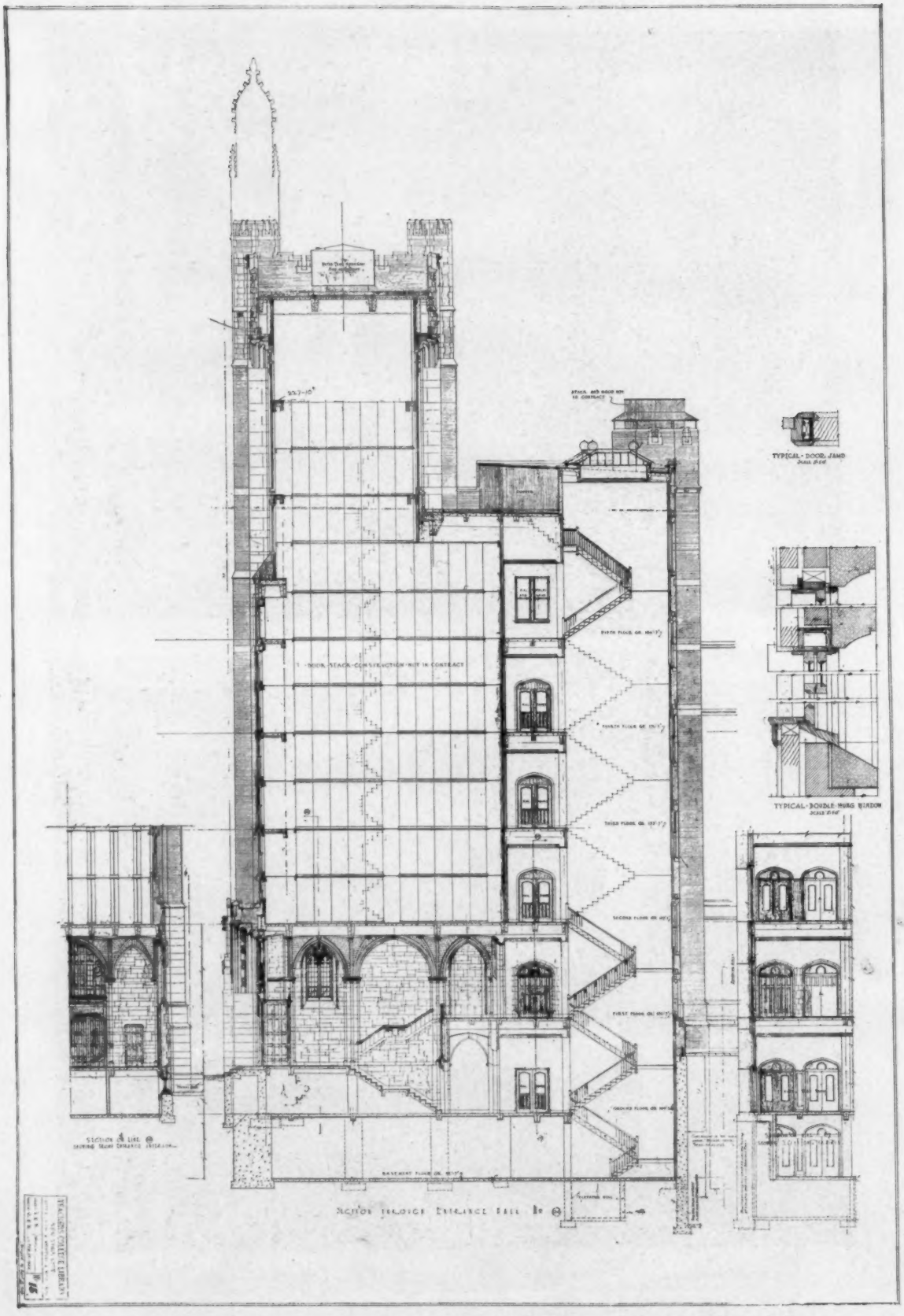

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XUM

LIBRARY BUILDING, TEACHERS COLLEGE, COLUMBIA UNIVERSITY, NEW YORK

ALLEN & COLLENS, ARCHITECTS

THE AMERICAN ARCHITECT
September 10, 1924. Plate 88

XUM

COMPETITION *for* AUDITORIUM *for* CITY *of* DALLAS, TEXAS

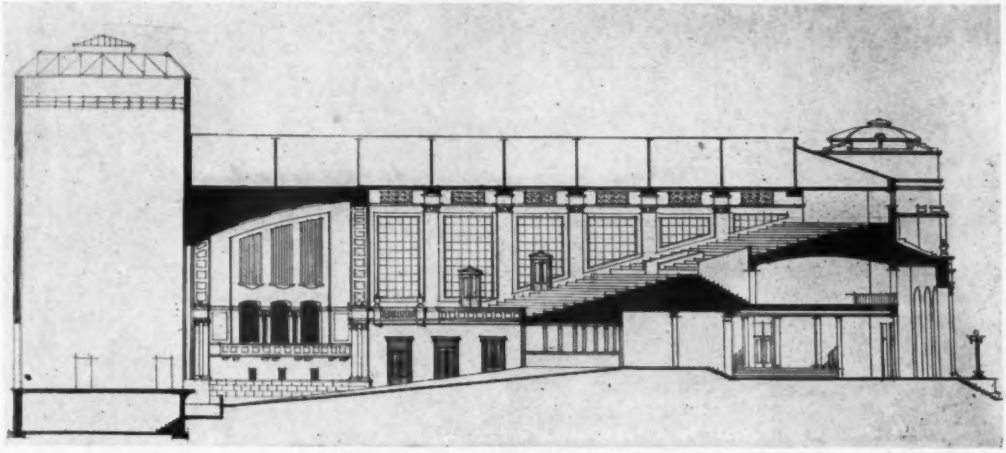
BY RALPH BRYAN, A.I.A.

IN the proceedings of the recent Institute Convention one may read of a discussion on the problem of competitions. As a matter of fact, one may always read of a discussion of competitions in the proceedings of any Institute Convention. In this most recent discussion, however, two of our States came in for particular mention as being localities where it was extremely difficult to convince owners who favored the competitive idea of the desirability of abiding by certain features of the A.I.A. Competition Code. The States thus appearing upon the pages of the proceedings were Kansas and Texas.

It may therefore be of interest to the profession at large, and certainly to those who sat through the activities at Washington or who have since perused the pages of the "Proceedings," to know that there has just been completed in the Commonwealth of Texas the first architectural competition ever held in that state under the full Institute rulings. It is probably the first such in the entire Southwest as well.

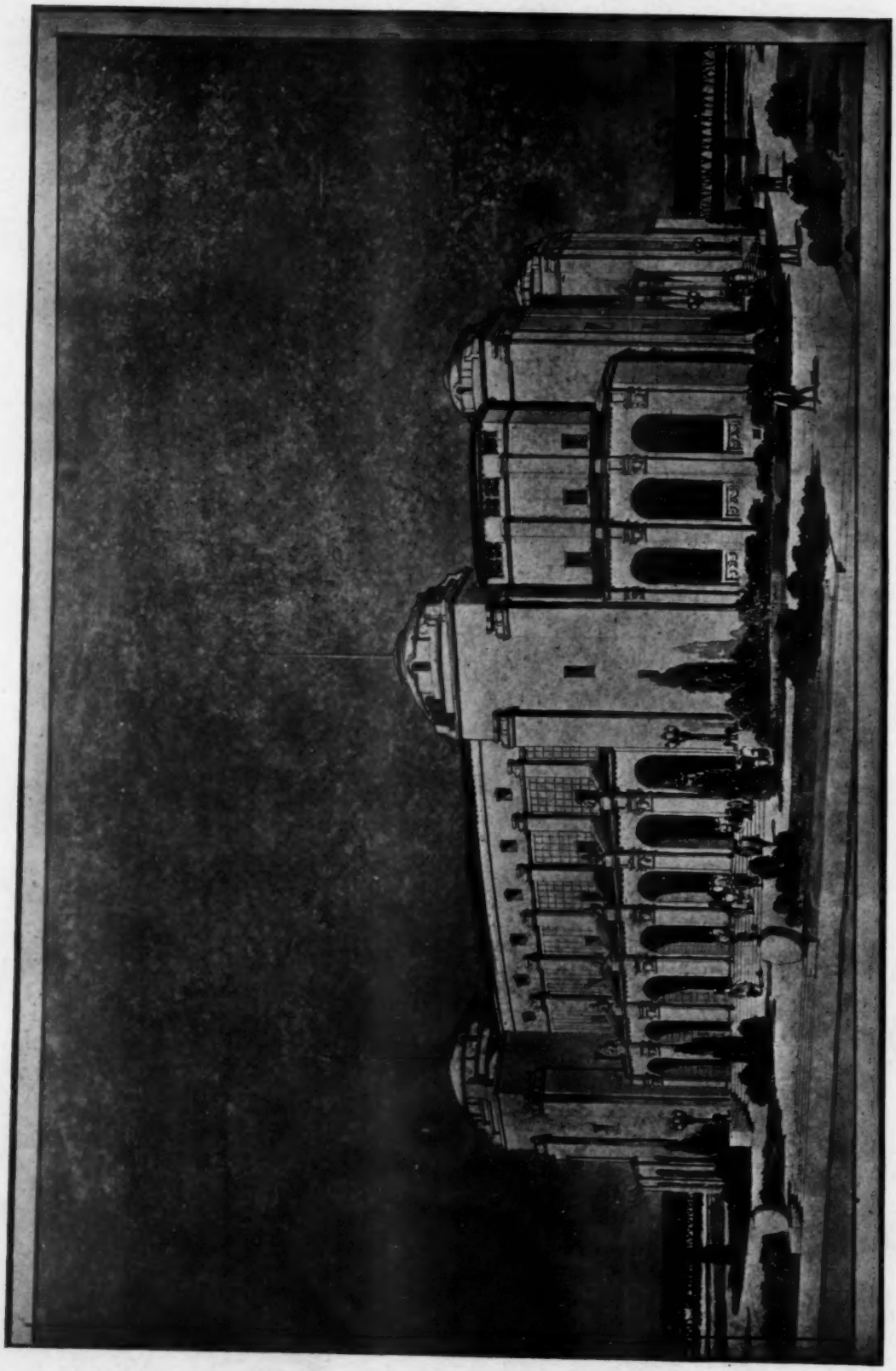
The project was a Municipal Auditorium for Dallas, and the fact that the competition finally came to be an authorized procedure in spite of the early misgivings of the owners is due alone to the efforts of the North Texas Chapter. Furthermore, the success of this enterprise puts a more roseate tinge into the drab colors with which the picture of competitions in the "outlying districts" was painted at the Washington Convention.

A brief history of the case follows. In the Spring of the year notices appeared in the Dallas press to the effect that the City of Dallas and The Texas State Fair Association would jointly build an auditorium to be located upon the permanent grounds of the Texas State Fair in Dallas. Shortly thereafter several Dallas architects were requested to present their ideas upon such a project to H. A. Olmstead, President of the Fair Association. This request created a bit of excitement in the profession locally, bearing some of the earmarks of a good old catch-as-catch-can competition. This was borne out by Mr. Olmstead's very logical statement of his position as an owner; that his job was the selection of the architect for the project, that he wanted ideas to help him in his selection and if at this stage of the proceedings certain architects wanted to present sketches, while others did not, professional ethics being no concern of his, he would most certainly not refuse to look over such sketches. However, after an informal meeting of Dallas architects it was agreed among themselves that the information requested would be presented in letter form and that no sketches would be prepared.



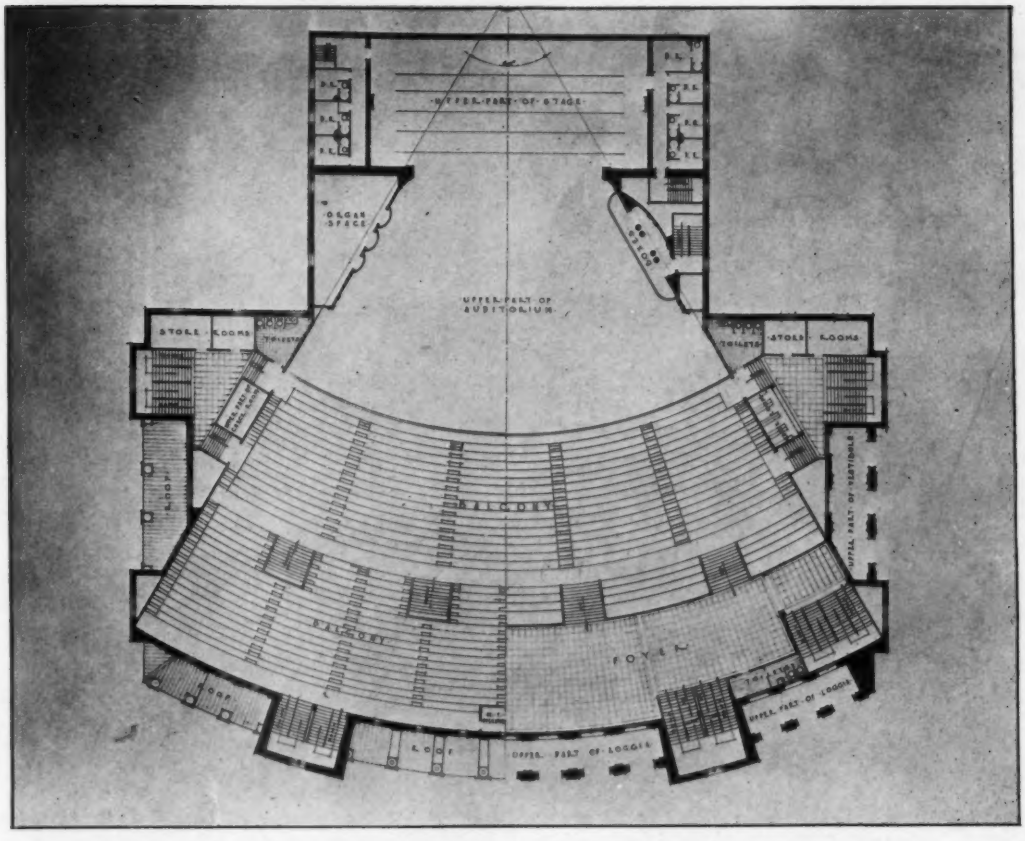
LONGITUDINAL SECTION—WINNING DESIGN

LANG & WITCHELL, ARCHITECTS

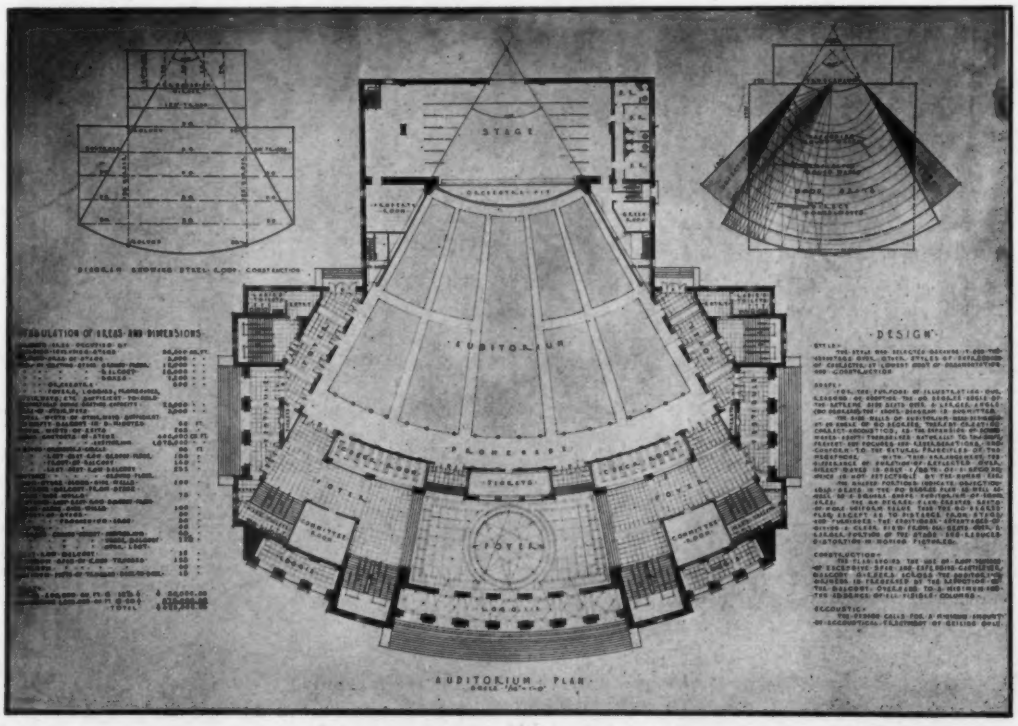


WINNING DESIGN—LANG & WITCHELL, ARCHITECTS

MUNICIPAL AUDITORIUM COMPETITION, DALLAS, TEXAS



BALCONY FLOOR PLAN



GROUND FLOOR PLAN

WINNING DESIGN—LANG & WITCHELL, ARCHITECTS

MUNICIPAL AUDITORIUM COMPETITION, DALLAS, TEXAS

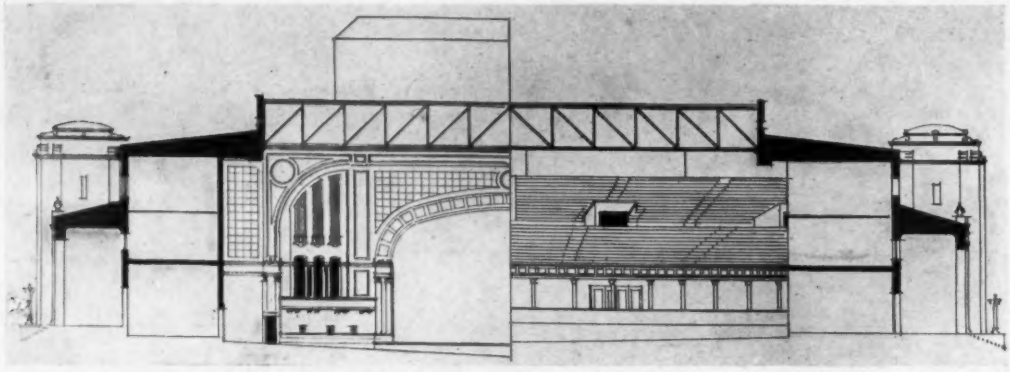
MUNICIPAL AUDITORIUM COMPETITION, DALLAS, TEXAS

XUM

Letters were then written by several of the Dallas firms stating their ideas of the proposition as well as their own credentials. This information was of assistance to the owners in giving them points to observe while on an inspection trip to several of the larger municipal auditoriums in the country —but did not help them in the direct selection of an architect.

A full committee was then appointed by the owners, with Mr. Olmstead as Chairman and John C. Harris, representing the City of Dallas and Emil Fretz representing the Park Board

The North Texas Chapter through its Executive Board and Clarence C. Bulger as President, next offered its assistance, suggesting the selection of an architect by any one of three methods —by direct appointment, by the appearance of architects before the committee in a verbal presentation of their qualifications, or by a limited authorized competition.



TRANSVERSE SECTION, WINNING DESIGN

LANG & WITCHELL, ARCHITECTS

This latter method appealed most strongly to the owners who admitted the advisability of limiting the competition to firms of acknowledged ability, but questioned the need of a professional advisor and came to a deadlock with the Chapter on the idea of anonymous drawings. However, five Dallas architects were selected; Messrs. Lang and Witchell, DeWitt and Lemmon, Thomson & Swaine, C. D. Hill and Company, and R. H. Hunt Company, and the drawing up of a program turned over to them. The program was prepared —carrying with it the naming of E. J. Russell, F. A. I. A. of St. Louis, as professional advisor and the recommendation that the drawings be anonymous. This was finally approved by the owners' committee and a copy sent Mr. Russell, who approved it and accepted the advisory position.

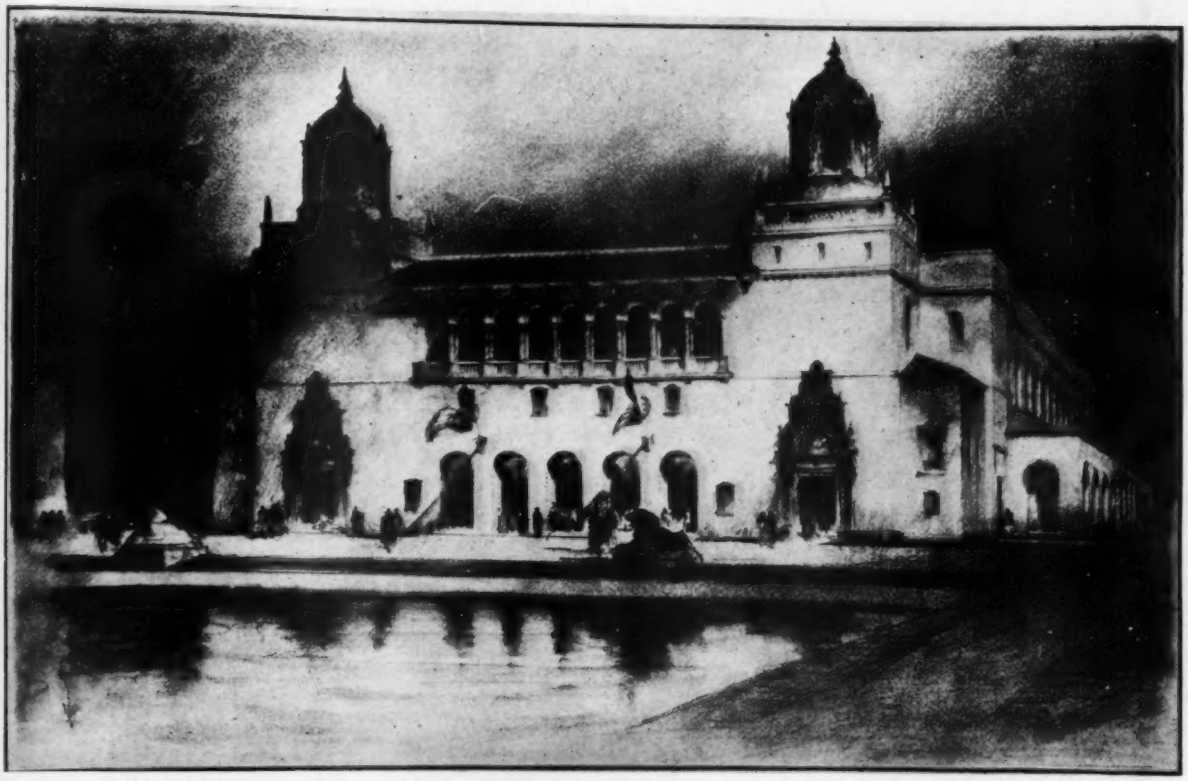
And so the competition was held and on July 27 the winners were announced to be Messrs. Lang and Witchell, no second or third places being awarded. As for the financial considerations mentioned in the program, the total architectural fee allowed by the owners was 5¼%. Of this, the successful competitor was to receive 4¾% for the full completion of his services, the other ½% being divided equally among the four other competitors as their remuneration after the expenses of the professional advisor had been deducted.

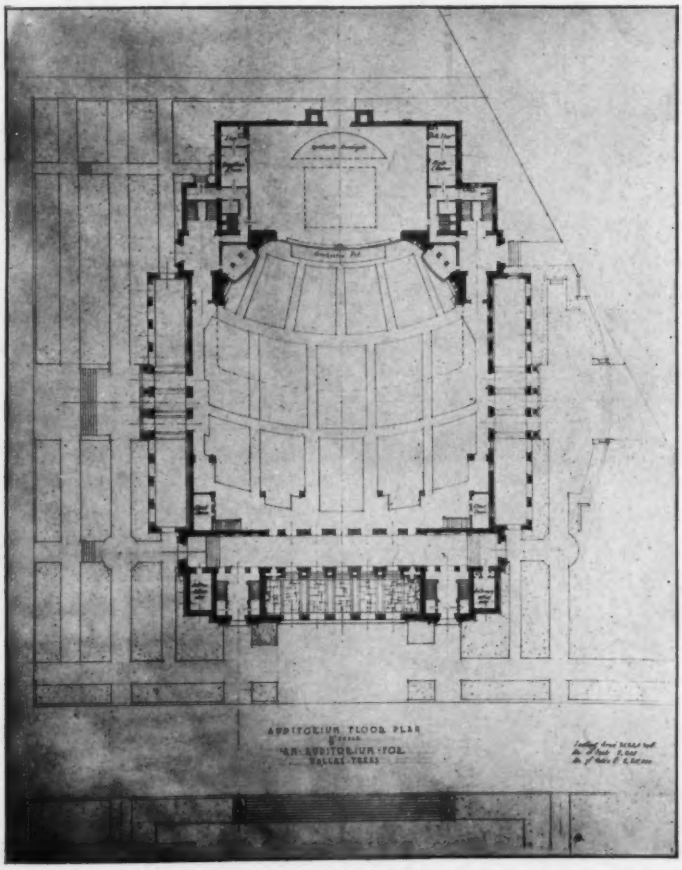
The winning design was selected largely by reason of its unique floor plan, being a distinct departure from the more or less rectangular auditorium plans of the other competitors. The 60 degree angle of the side walls does away with the objectionable corner seats and requires a minimum of acoustical correction. The objection of greater distance from the stage for some of the seats in this plan is overcome by the more desirable lines of vision obtained and better acoustical properties of the plan.

It is interesting to note, as indicative of the architectural trend in the Southwest, that of the five designs submitted three were adaptations of the Spanish, the other competitors choosing to adapt their elevations more nearly to the design of the older buildings on the Fair site.

EXTRACTS FROM THE PROGRAM

THE problem involves the design of an auditorium with a seating capacity of 5000 clear viewing seats, allowing an area of six square feet per seat including aisles; based on net area of seating space, with a "Standard Stage" suitable for Grand Opera, Road Shows or Musicales. To be provided with a sufficient number of dressing rooms of proper size. Space shall be provided for a number of committee rooms for use during conventions; location and size left to competitors. Space shall be provided in basement, for heating

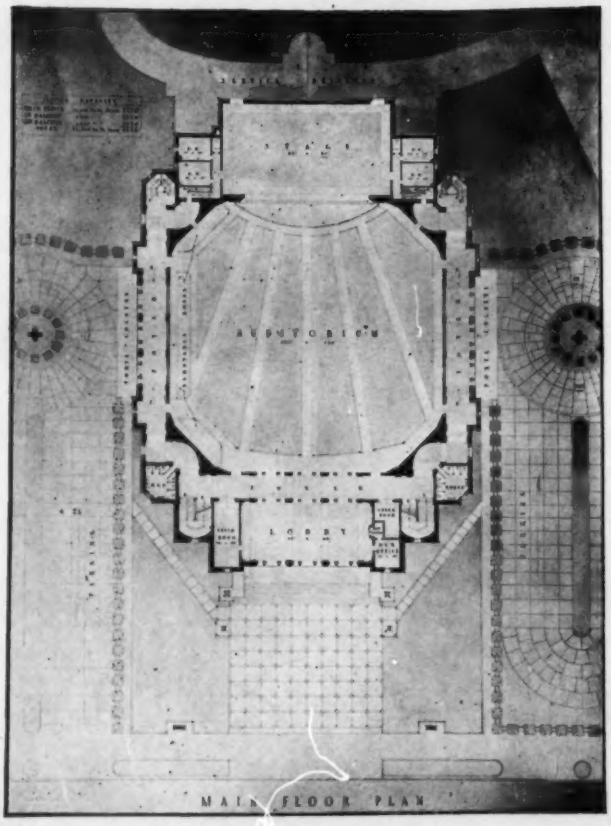




DESIGN SUBMITTED BY

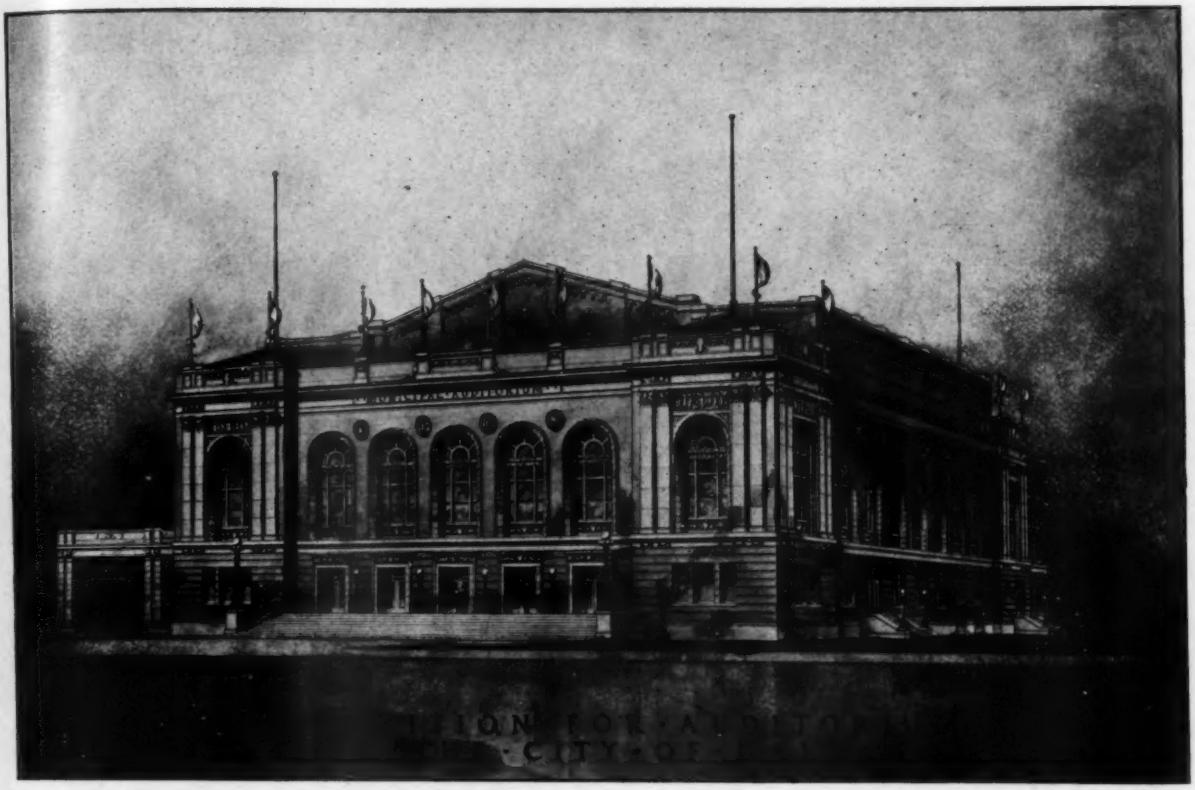
DE WITT & LEMMON, ARCHITECTS

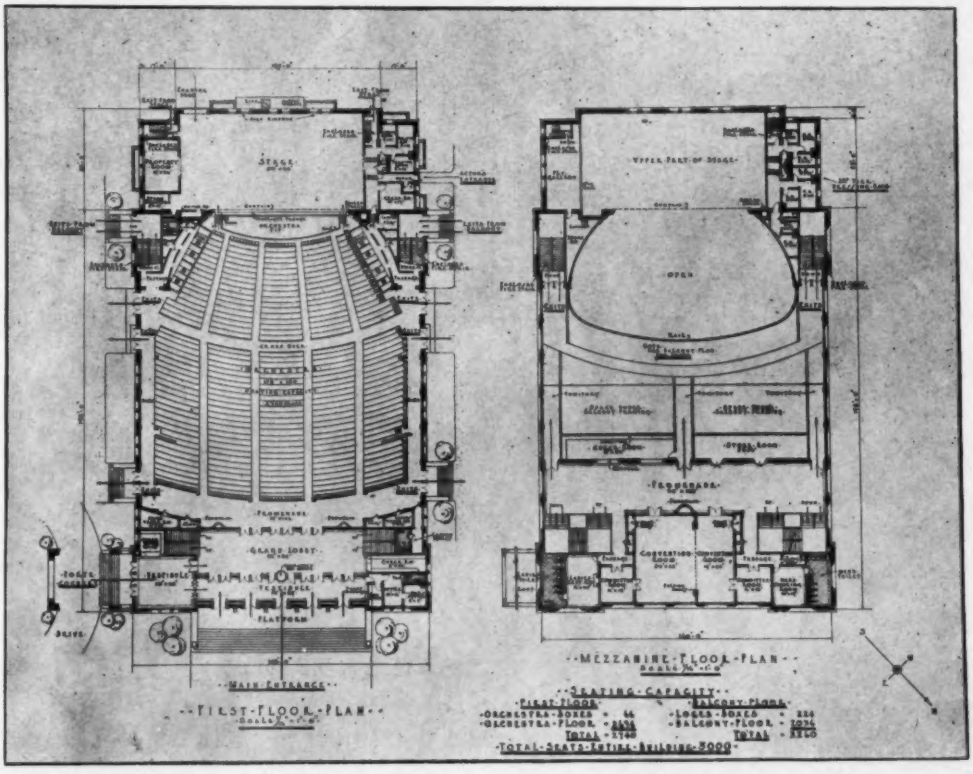
MUNICIPAL AUDITORIUM
COMPETITION,
DALLAS, TEXAS



DESIGN SUBMITTED BY
R. H. HUNT CO., ARCHITECTS

MUNICIPAL AUDITORIUM
COMPETITION,
DALLAS, TEXAS

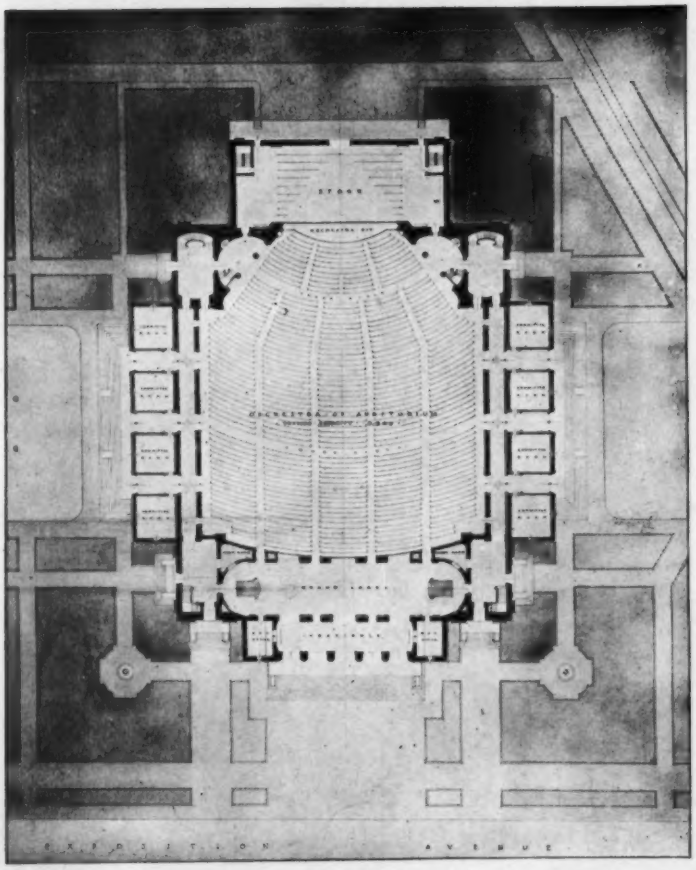




DESIGN SUBMITTED BY C. D. HILL & CO., ARCHITECTS

MUNICIPAL AUDITORIUM COMPETITION, DALLAS, TEXAS

· PROPOSED · AUDITORIUM · FOR · CITY · OF · DALLAS · TEXAS ·



DESIGN SUBMITTED BY

THOMSON & SWAINE, ARCHITECTS

MUNICIPAL AUDITORIUM
COMPETITION,
DALLAS, TEXAS

system. Space shall be provided for installation of pipe organ.

Cost

The cost of building shall not exceed $450,000.00 including auditorium and seats; $25,000.00 being allowed amount for seats making net cost of building $425,000.00 exclusive of architect's fee, organ, stage equipment, furniture and fixtures. All work on grounds, including sidewalks, grading, etc., done by owners.

Each contestant shall furnish with his drawings, a statement of cost and his method of arriving at such cost, either by cube system or itemized system; so that judges will have some basis on which to check and find if true.

Each contestant shall give the full cubic contents of building taken from outside wall lines of building above grade line.

Site

Will be on a plot of ground owned by the City in Fair Park. Survey and grades shall be furnished by owner to each competitor. Particular attention shall be paid to other buildings on the grounds, and to entrance and exit locations. Entrance shall parallel the street passing by the present Automobile Building.

Judgment

The competition will be judged by four members as follows:

H. A. Olmstead of Dallas, Texas
John C. Harris of Dallas, Texas
Emil Fretz of Dallas, Texas

and by an architect member of the American Institute of Architects, selected by the five competitors. The jury will select the winning design, and the representatives of the City agree to enter into a contract with the winning architect for the making of plans for the building.

The representatives of the City agree to set aside 5¼% of the estimated cost of the building, namely $450,000.00 to cover the cost of judge of the competition, prizes to contestants and fees to the winning architect. Twenty-two hundred and fifty dollars ($2250.00) of the above shall be set aside to defray the expenses of the competition; the balance left after judge has been paid, to be divided equally between the four contestants not winning first prize. The balance of the 5¼% is to be the fee to be paid to the winning architect for full services required for plans, specifications, engineering service, and supervision of the building.

HOUSE OF FRANCIS G. NOBLE, NORFOLK, CONN.

TAYLOR & LEVI, ARCHITECTS

DETAIL OF ENTRANCE

An INGENIOUS *and* ARTISTIC DECORATION *for* STEAMSHIPS

A PLEASING departure from the orthodox ornamentation of such parts of passenger ships as are set aside for places of assembly is noted in the mural paintings just installed on the two additions to the fleet of lake steamers operated by the Lake Erie, Detroit and Cleveland Navigation Company of which Albert Kahn, architect, directed the interior architecture. These novel decorations take the form of pictorial maps in which numerous vignettes of varied significance are disposed over a background showing the Great Lakes in all their geographical exactness.

The artists, Francklyn Paris and Frederick J. Wiley of New York, have introduced in the design all sorts of transportation conveyances used throughout the hundred and fifty years of occupation of this part of the United States by the white race, ranging from the stage coach of revolutionary days to the aeroplanes of the present time.

The dominant colors of the decorations are blue and buff, with touches here and there of red and gold. The passenger for whose eyes this panorama is displayed can trace the course of the Navigation Company's ships across the various lakes by means of a line of dots with here and there miniature steamers proceeding along the indicated trail. A cartouche in one corner contains a view of one of the company's liners under full steam flanked by the coats of arms of France and the Netherlands and topped with the head of a buffalo in a circular shield supported by winged cupids.

ALBERT JAMES MacDONALD

FEW, if any, of the men engaged in the field of architectural journalism are more widely known and respected than was Albert James MacDonald, editor and part owner of *The Architectural Forum,* whose sudden death by drowning occurred on August 17.

Born at Brookfield, Mass., December 17, 1889, he studied at the Massachusetts Institute of Technology, later coming to New York, where he was employed in the office of Aymar Embury, II. Always interested in the editorial aspect of publishing as well as in architecture, he acted for a time as assistant editor of *The Architectural Review.* In 1913 he became associated with the late Arthur D. Rogers on *The Brickbuilder,* which afterwards became *The Architectural Forum.* Upon the death of Mr. Rogers he became President of The Rogers and Manson Company and Editor of *The Architectural Forum.*

Mr. MacDonald's fine ability and genial personality secured and held for him a wide circle of friends who will sincerely regret his untimely death.

ENTRANCE HALL OF THE JOHN CRERAR LIBRARY BUILDING, CHICAGO, ILL.

HOLABIRD & ROCHE, ARCHITECTS

The dignity of the architectural treatment is made interesting by its original detail as well as by the decorated ceiling. Unity in the design between walls, ceiling and lighting fixtures accounts for the impressive harmony throughout

INTERIOR ARCHITECTURE

Designing the Office Building Lobby

WHETHER an entrance hall conducts one into the comfortable cordiality of a country house or into the staid dignity of a banking institution, the architectural and decorative treatments in both cases should portray an invitation to enter. This invitation and the degree in which it is expressed mark the success of the design. It is best portrayed by properly preparing the one who enters for what he expects to find within. The entrance hall of a house offers an appealing invitation by a mere suggestion of the informality and hospitality which abound within. The lobby of the bank bids just as hearty a welcome by the note of solidity in its design which suggests so positively the formality and security of the banking quarters. The entrance to a church or a theatre has its functions just as definitely established. The problem, however, with which the designer of the lobby of the office building is confronted is quite a different matter. The main difficulty lies in determining just what one does expect to find within its walls. The building may contain brokers' offices, sales and show rooms of all manner of products, doctors' and architects' offices. All these have their own individual entrance halls or lobbies which can easily be made in a design appropriate to their purposes. But these halls or lobbies have very little, if anything, in common. What, then, can the lobby prepare one for which leads one only into other lobbies of various designs and styles?

Let us consider it from a psychological angle. All types of people of whatever minds that enter an office building during the day might be classed

under two groups: those of serious thoughts and purposes, and those of lighter thoughts and intents. The design of the lobby must make its appeal to both types. After all, this is not such a bad way of studying out a design. Architecture is something more than mere casual ornamentation and decoration; there should be a reason for its design, always. Let us, then, figure it out along these lines. The most conspicuous part of any interior design is that which is on or nearest the level of the eye. In this, as in most cases, that is the wall treatment. There must be no detail in this part of the design, at least, that will tend to disturb the serious mind. Interest, yes, for that only increases satisfaction, but not elaboration or ornamentation which will detract. This leads directly to a dignified wall design for the office building lobby, and on that we may build our scheme. On the other hand, the ceiling is the last place that the eye looks to for the satisfaction which is lacking elsewhere. The eye that finds nothing to hold its attention on the direct line of vision, gazes finally to the ceiling to find satisfaction. Walls, then, marked by interesting dignity, surmounted by a ceiling which attracts by its ornamentation, seem to offer the solution in a nut shell. The dignity of the walls satisfies the seriously minded, and, once more, holds the gaze from further rambling; the ornamental and decorative character of the ceiling satisfies the minds of those of lighter thoughts, who look further for relief from the dignity of the walls.

ENTRANCE LOBBY IN THE MAGNOLIA BUILDING, DALLAS, TEXAS

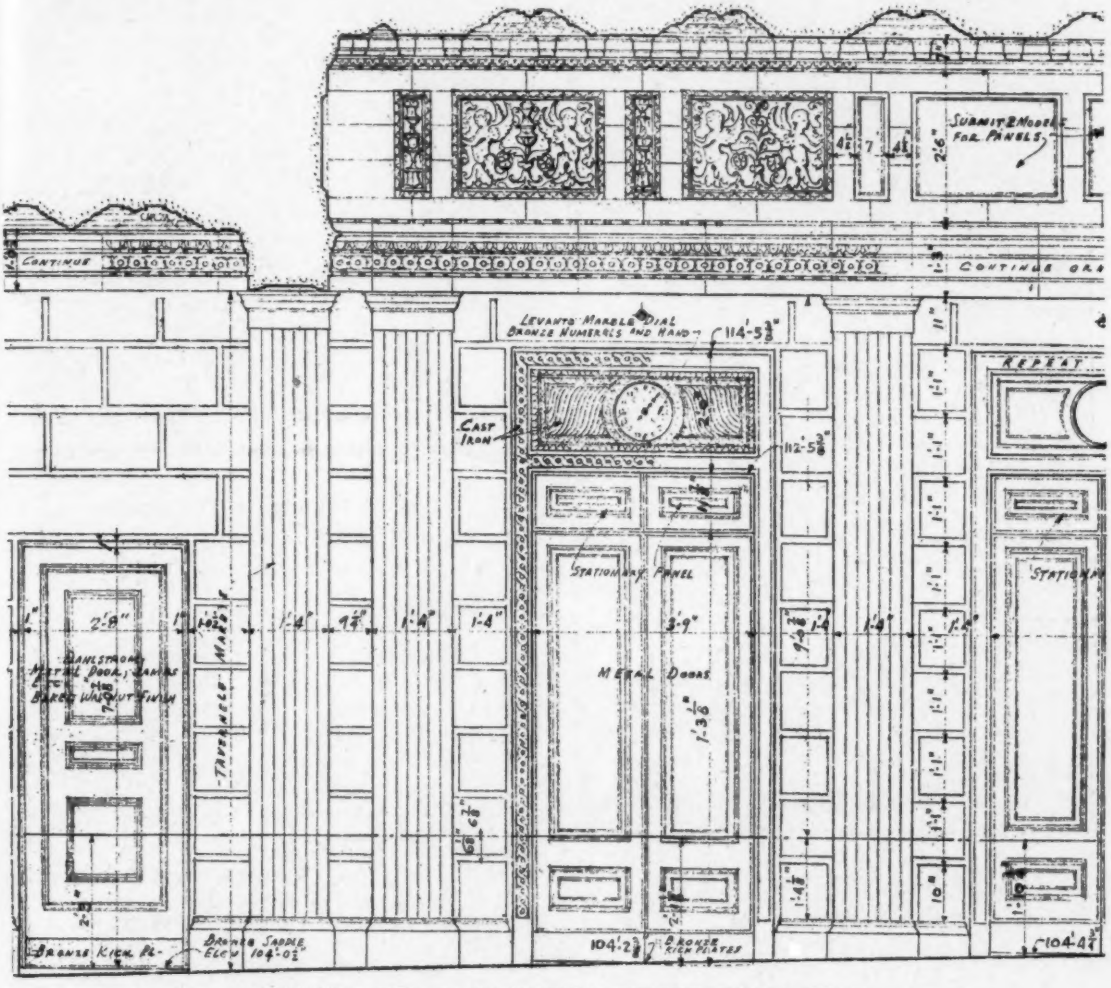
ALFRED C. BOSSOM, ARCHITECT

The walls are formed of Sansabba marble with panels and trim, surrounding the bronze elevator doors, of cast iron, finished in verde antique. The frieze and ceiling are in polychrome plaster in shades taken from the marble, iron and bronze. The floor is of rubber tile

The use of the word design in the foregoing paragraph must needs be explained to avoid misunderstanding. Where a material alone offers interest through its natural qualities, as do many marbles

and woods, for instance, interest need not be further emphasized by its application to the walls. In other words, the design of the marble or wood itself makes the design of the walls to which it is applied. A design, then, to express certain qualities must take into consideration the materials used and their natural qualities. Marble is a dignified material, and certain ones, marked in striking figures and colorings, are interesting as well. Stone is also dignified and formal, and yet, except in very few cases, as travertine, is not interesting. The design in which the stone is applied can easily add this interest, but a much simpler design would suffice for the marble. The word design is used above in the sense that it applies to the material itself and the manner in which it is applied.

Following out the idea of the line of vision, the floor may be said to be second to the walls in attracting the gaze of the eye. Its treatment, thus, should bear similar qualities to the wall, though in a less degree. It must never detract from the walls, but be in perfect harmony with them. A ceiling design, on the other hand, may be related in one of two ways to the wall treatment. First, it may be in harmony with it; that is, panelled in lines that are carried out from the wall design, or with beams which are supported by wall columns or pilasters, for instance. The eye naturally surveys such a ceiling design, and added interest must be given the wall treatment to counteract that result, and avoid the detracting of the serious mind. Second, the ceiling design may


SUBMIT 2 MODELS FOR PANELS
CONTINUE
LEVANTO MARBLE DIAL BRONZE NUMERALS AND HANDS
114'-5 3/8"
REPEAT
CAST IRON
112'-5 3/8"
STATIONARY PANEL
METAL DOORS
3'-9"
2'-8"
1'-4"
9 1/2"
1'-4"
1'-4"
1'-4

be quite apart from the treatment of the walls. Interest in the ceiling design is not a difficult thing to obtain with the various manners of decoration and ornamentation which may be employed, but, in order not to detract from the dignity of the ensemble, too much interest,—that is, too lavish ornamentation,—must be avoided to prevent

DETAIL OF ELEVATOR DOOR IN ENTRANCE HALL OF THE JOHN CRERAR LIBRARY BUILDING, CHICAGO, ILL.

HOLABIRD & ROCHE, ARCHITECTS

Originality of detail with a fine regard for light and shade makes this design especially interesting

the ceiling from becoming the focal point of the room. It must be remembered, too, as already explained, that materials have much to do with creating interest, and elaborate ceilings are sometimes put very much in the background by interest which is created in materials in which simple wall treatments are constructed. Attention is called to the lobby of the General Motors Corporation Building shown on this page, the First National Bank of Jersey City on page 245, and the John Crerar Library Building on page 241. The first illustrates a ceiling quite apart from the wall treatment, although arising naturally from it. Interest in the walls is not at all diminished by the ornamental ceiling. The second shows a

LOBBY OF THE GENERAL MOTORS CORPORATION BUILDING, DETROIT, MICH.

ALBERT KAHN, ARCHITECT

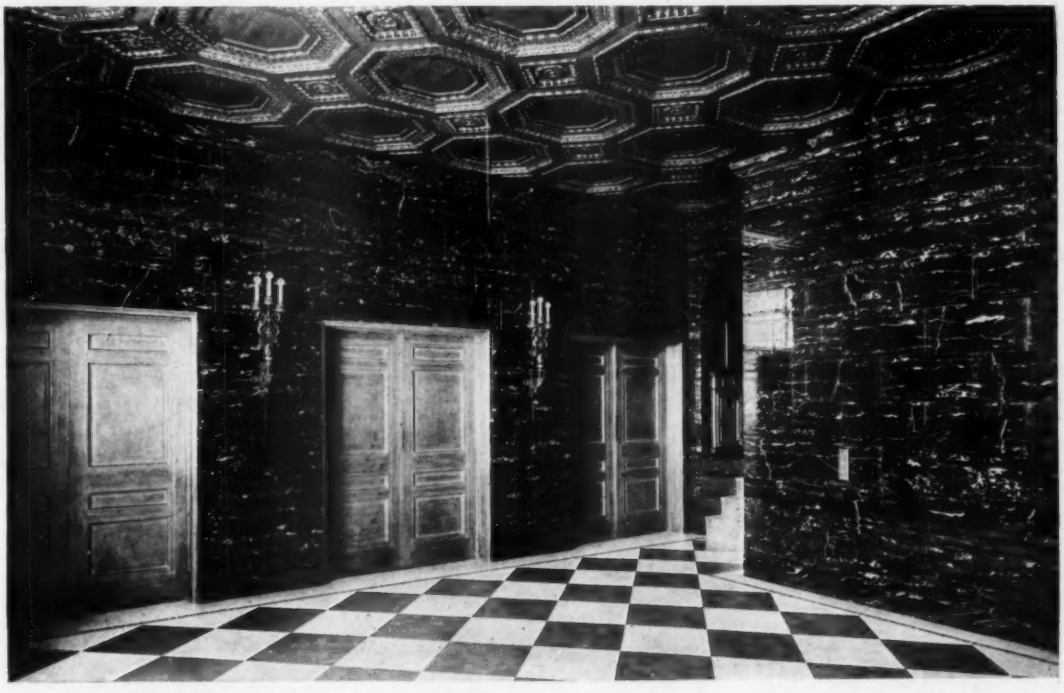
While the walls have a decided architectural interest, such interest does not detract from the dignity of the design

similar example in which interest, however, in the walls is created entirely by the material of which they are constructed. In the third case, the ceiling, again, is not connected directly with the wall design, but both ceiling and walls have remarkably satisfying qualities of their own.

A door with its surround in any design has a certain function to fulfill, in that it invites one to pass through, and this passage will become more easy and enjoyable when the door itself and its surround are of an interesting design. Such interest could not, therefore, be considered a detraction from the wall design; in fact, it presents opportunity for increased interest in the wall of which it is really a part. Thus do the elevator doors, a decidedly important part of the walls of most lobbies of office buildings, take a prominent part in the design of the walls, and, as such, their design must also be controlled by dignity and interest. Notice on pages 242 and 243 showing the entrance hall of the Magnolia Building, the prominence given to the design of the doors themselves as well as their surrounds. They only enhance interest in the walls, however; the very ornate ceiling needs more than ordinary interest to counteract its effect. On this page showing the de-

tail of the elevator doors in the lobby of the John Crerar Library Building, it will be seen how much a part of the wall design the door surround can be made, while the door itself in contrasting material, is finely contrasted in design. Interest is only further pronounced thereby. In the First National Bank building shown below, the entrance to the bank proper is featured so prominently by an ornamental bronze screen, placed on a landing several steps above the floor level, that interest in the walls is materially lessened. The screen, covering the full height of the wall, acts as a wall design. On the side walls of the same entrance hall, the show windows of shops give the interest to the walls. Decorative walls would detract from their function.

Stone and marble are so often used for the walls of the lobby of an office building for the reason that they possess natural qualities of interest combined with striking dignity. As already pointed out, the walls of one of the illustrations shown herewith are of black and gold marble without any semblance of decoration in its treatment. The marble itself, marked by a conspicuous figure, is interesting enough on its own account. Combined with doors of silver gilt, and a floor of black and grey square blocks, the interest in the formal dignity which it personifies is never lacking. The serious mind is completely satisfied, and, further, not disturbed. Added to this a walnut ceiling, divided into small hexagonal panels, with ornamental mouldings picked out in silver gilt, injects a note of informality into the scheme—informal in its material, wood, and informal in its design. The mind of lighter thoughts is satisfied without doubt. And so through the other designs. Interest, which, in the case cited above, is obtained by the material itself, is often created by the design in which the material is constructed. The lobby of the Library Building, for example, where the walls are of stone of rather plain color and texture, depends on its architectural design to a great degree for its interest. The stone, however, gives dignity to the scheme.



ENTRANCE HALL OF THE FIRST NATIONAL BANK, JERSEY CITY, N. J.

ALFRED C. BOSSOM, ARCHITECT

The walls are of black and gold marble from floor to ceiling, with elevator doors of silver gilt, and the ceiling of natural walnut, picked out in silver gilt. The floor is in large squares of Belgian black and grey Tennessee, and the electric fixtures are finished as the elevator doors

Summing up, it might be said that a room which caters to such varied types of minds must have in its design something that will interest the average mind but not detract from its thoughts. In-

terest can easily be supplied in the material itself or in the design in which it is applied to the walls. Furthermore, the interest must be spontaneous. This eliminates fussy details. All of which tends to favor the use of materials which supply the interest, and a simple manner of application.

All the aforesaid remarks hold good in regard to the lighting of the lobby of the office building. Ceiling fixtures should be designed in keeping with the ceiling ornament, so that they do not detract from the walls. On the other hand, wall brackets may be quite decorative, for, as such, they enhance the decorative value of the walls. In the illustration of the Magnolia Building on page 242, the ceiling fixtures appear to be an actual part of the ceiling design. They in no way detract from the walls, and are only evident when looking at the ceiling. On page 245 showing the entrance hall of the First National Bank of Jersey City, the wall brackets are a feature of the wall design. Against the severe background of the plain black and gold marble, they are conspicuous. Finished as the elevator doors in silver gilt, which note is repeated again in the ornament of the ceiling panels, there is unity throughout the whole design.

Although feeling somewhat apologetic for solving an architectural problem by means of psychology, the method is not so far fetched as it may at first seem. Is there a reason for every design you make? Ask yourself why every detail is there, and, if you cannot answer it satisfactorily, remove it. One of the greatest faults of our designs today is the absence of a reason for their details. The new American style towards which we are heading, and heading fast, is to be based on reason. That is admitted. It means elimination of meaningless ornament and petty details. Listen to what H. Bartle Cox, A.R.I.B.A., says in *The Architects' Journal* (London), under an entirely different title: "Meaningless ornament, mouldings, cartouches, trophies, and the usual stock-in-trade paraphernalia of the average draftsman are only used if they can be executed rapidly, that is to say, cheaply, which means without feeling. The commercial man supplies them to the trade, but the enlightened public now consider that real luxury is not so much a matter of the amount of work on a material as the choice of the material itself. The workman, too, is in a greater hurry to make money than was his forefather, and fussiness is surely a sign of weakness. Decorative art, then, is the adaptation of a human appreciation for the beauty of nature unadorned: Refinement resulting from selection."

LOBBY OF THE FIRST NATIONAL BANK BUILDING, DEROIT, MICHIGAN

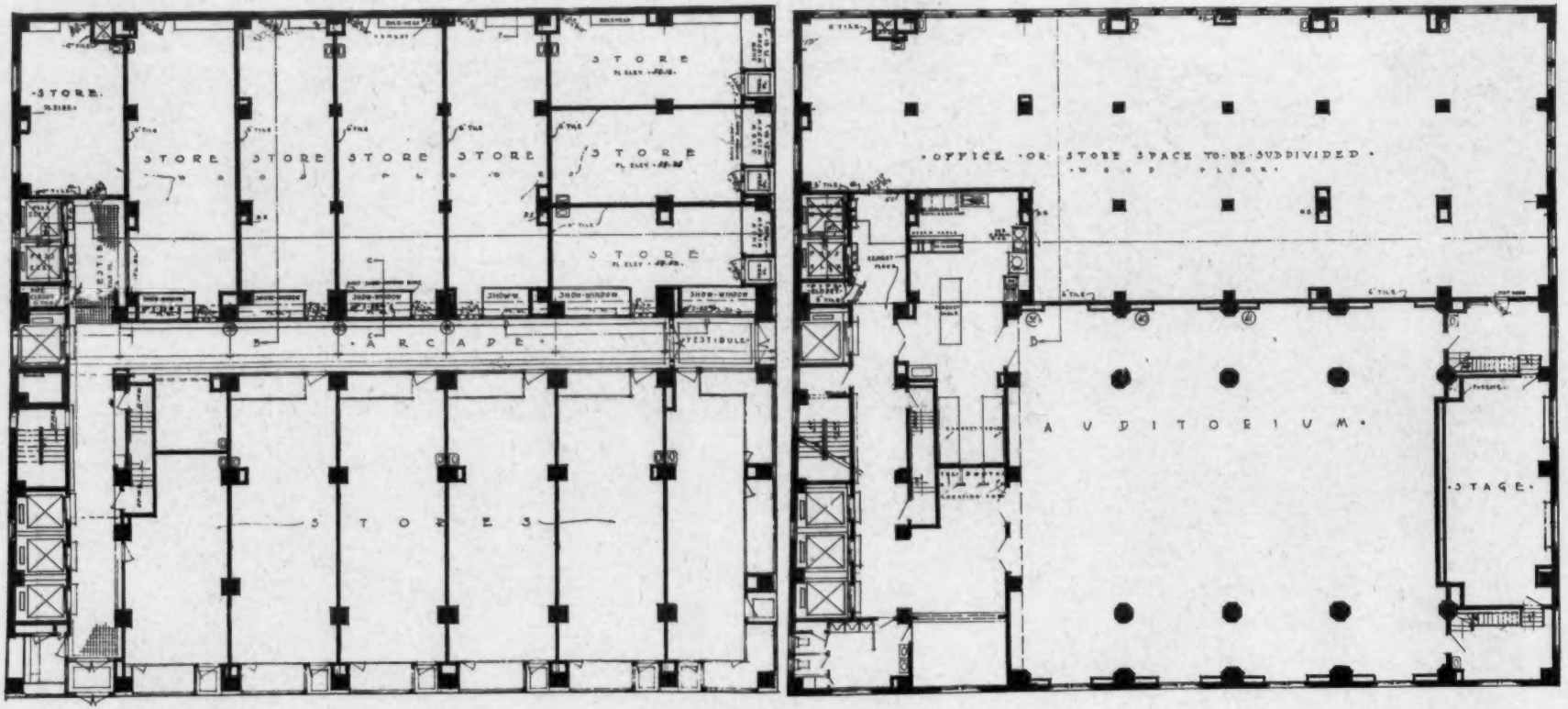
ALBERT KAHN, ARCHITECT

The severe treatment of the walls is relieved by a decorative ceiling. The entrance to the bank proper is made a feature by ornamental bronze doors placed on a landing a few steps above the floor level

CITY CLUB, ST. LOUIS, MO.

T. P. BARNETT CO., ARCHITECTS

(Plans on back)



CITY CLUB, ST. LOUIS, MO.

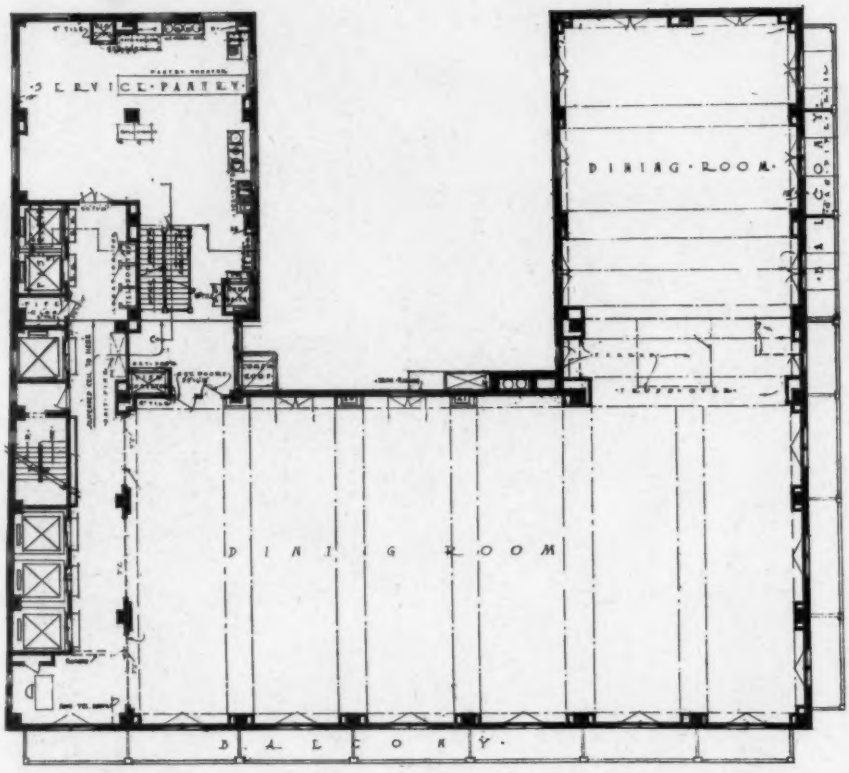
T. P. BARNETT CO., ARCHITECTS

PRINCIPAL ENTRANCE

CITY CLUB, ST. LOUIS, MO.

T. P. BARNETT CO., ARCHITECTS

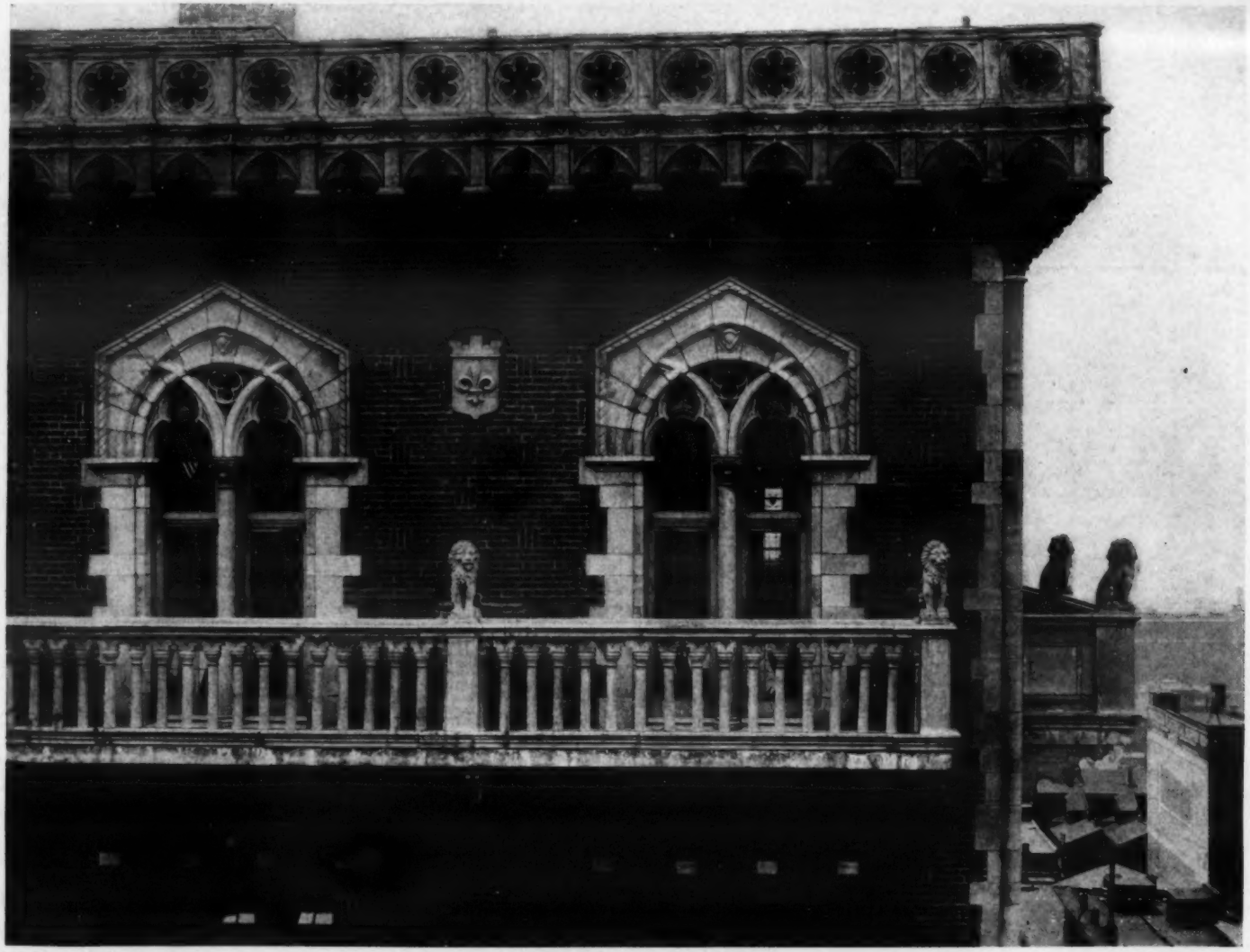
(Plan on back)



FOURTEENTH FLOOR PLAN

CITY CLUB, ST. LOUIS, MO.

T. P. BARNETT CO., ARCHITECTS

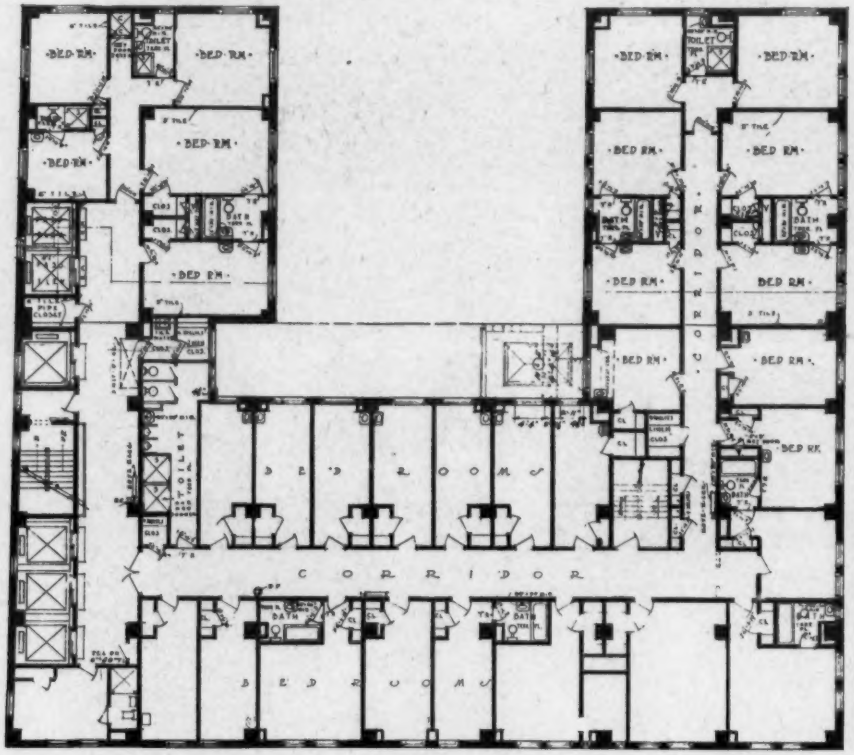


DETAIL OF UPPER STORIES

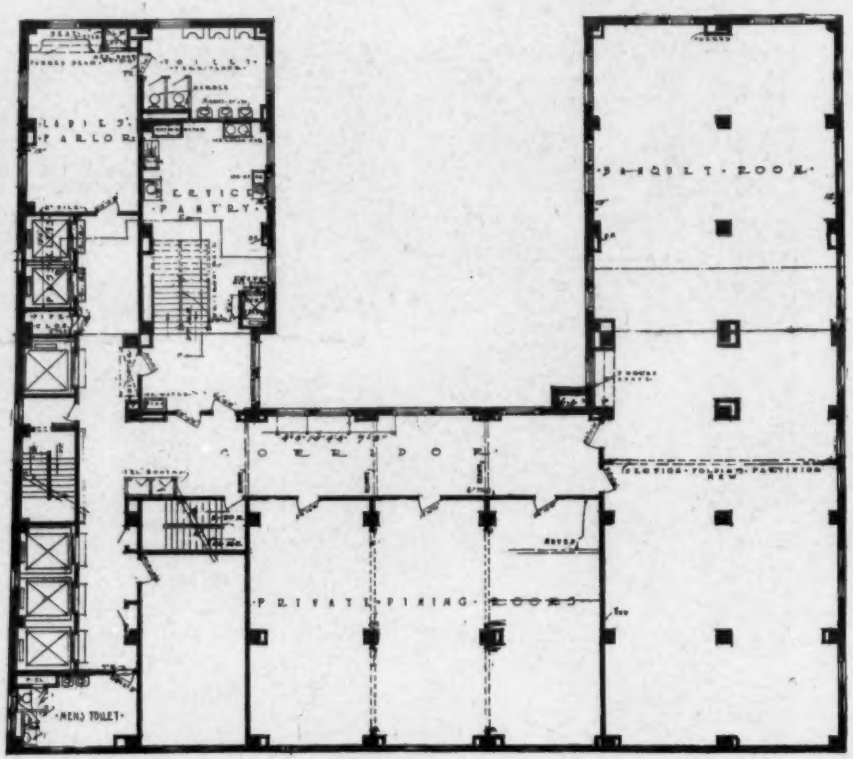
CITY CLUB, ST. LOUIS, MO.

T. P. BARNETT CO., ARCHITECTS

(Plans on back)



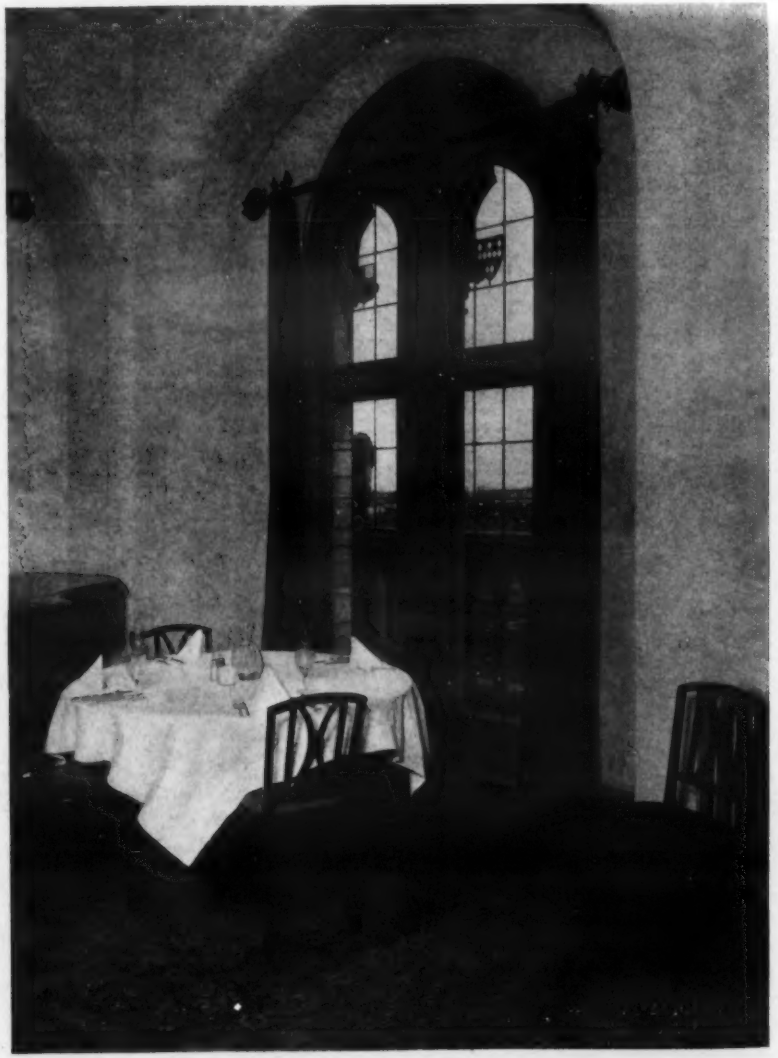
FIFTH TO EIGHTH FLOOR PLAN



ELEVENTH FLOOR PLAN

CITY CLUB, ST. LOUIS, MO.

T. P. BARNETT CO., ARCHITECTS



CITY CLUB, ST. LOUIS, MO.

T. P. BARNETT CO., ARCHITECTS

TEA HOUSE

ESTATE OF RICHARD ROWLAND, RYE, N. Y.

DWIGHT JAMES BAUM, ARCHITECT

FRONT VIEW

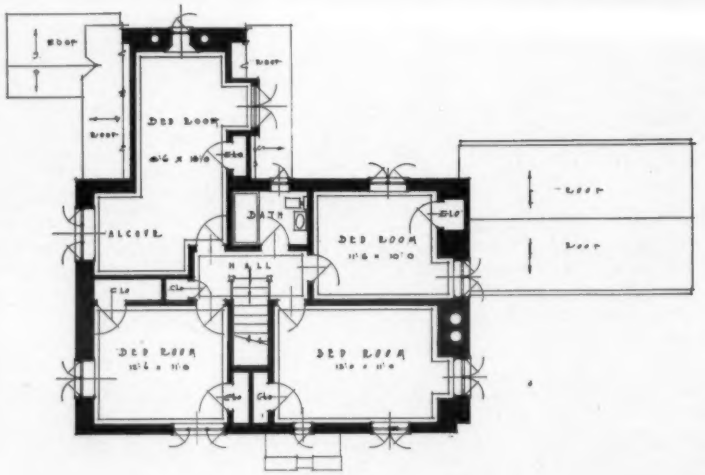
REAR VIEW

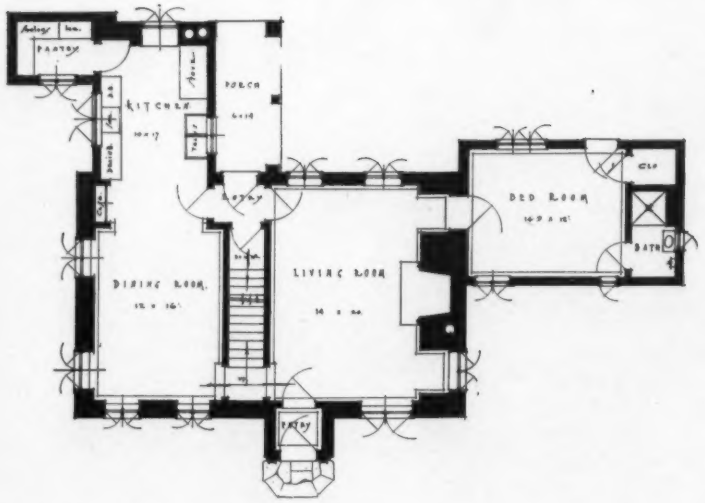
COTTAGE ON ESTATE OF RICHARD SELLERS, BELLEVUE, DELAWARE

PRENTICE SANGER, ARCHITECT

XUM

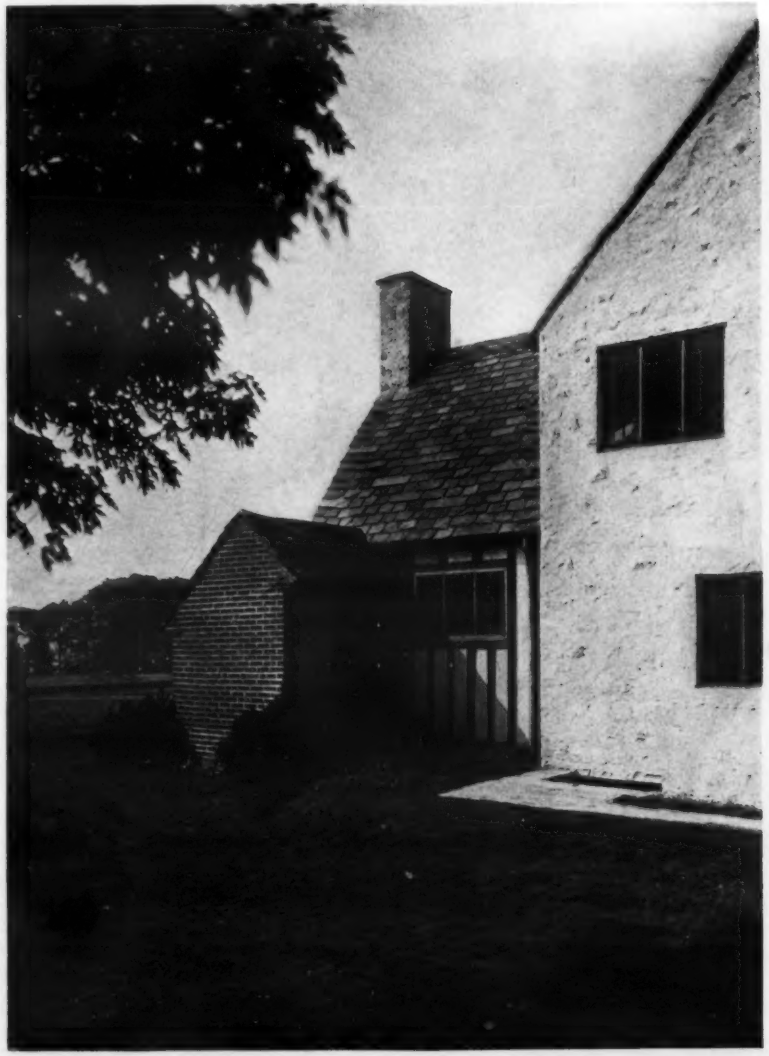
XUM





COTTAGE ON ESTATE OF RICHARD SELLERS, BELLEVUE, DELAWARE

PRENTICE SANGER, ARCHITECT



COTTAGE ON ESTATE OF RICHARD SELLERS, BELLEVUE, DELAWARE

PRENTICE SANGER, ARCHITECT

THE AMERICAN ARCHITECT
September 10, 1924. Plate 96

RECOMMENDED MINIMUM REQUIREMENTS *for* PLUMBING *in* DWELLINCS *and* SIMILAR BUILDINGS

THE development of present day practice in plumbing has been almost entirely in the hands of practical plumbers who have, in some instances, been guided by their business interests rather than by scientific facts. In this they have been seconded by organized mechanics whose chief aim was apparently to increase the use of material and thereby increase the amount of labor, for their own benefit.

A scientific analysis of plumbing requirements has been completed by the Sub-Committee on Plumbing of the Building Code Committee, U. S. Department of Commerce. Its report, bearing the title which heads this article, can be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C.* This is one of the most notable contributions to the subject of sanitary engineering which has been made in recent years and it should receive the cordial support and influence of architects in their efforts toward the revising of sanitary codes. The adoption of these recommendations will tend materially to decrease the cost of plumbing installations which will thereby result in increased health and comfort.

In order to study the capacity of house drainage systems, it was found desirable to establish a unit of fixture discharge—a unit involving both volume and time; that is, rate. The rate of discharge of an ordinary wash basin having a nominal 1¼" outlet, trap and waste, was found to be about 7.5 gallons per minute, a figure so near to one cubic foot per minute that the latter was taken as the definition of one fixture unit.

The following table based on the rate of discharge from a lavatory as the unit shall be employed to determine fixture equivalents:

	Fixture units
One lavatory or wash basin	1
One kitchen sink	1½
One bathtub	2
One laundry tray	3
One combination fixture	3
One urinal	3
One shower bath	3
One floor drain	3
One slop sink	4
One water-closet	6

One hundred and eighty square feet of roof or drained area in horizontal projection shall count as one fixture unit.

*Price 35 Cents.

It is recommended that the required size of a soil or waste stack shall be independently determined by the total fixture units of all fixtures connected to the stack, in accordance with the following tables:

WASTE STACKS

Number Fixture Units	Diameter of Stack	Permitted Length
	Inches	*Feet*
1	1¼	45
2 to 8	1½	60
9 to 18	2	75
19 to 36	2½	105

SOIL AND WASTE STACKS

Number Fixture Units	Number of Water Closets or Equivalent	Diameter of Stack	Maximum Permitted Length
		Inches	*Feet*
37 to 72	1 to 12	3	150
73 to 300	13 to 50	4	225
301 to 720	51 to 120	5	300
721 to 1,080	121 to 180	6	400
1,081 to 1,920	181 to 320	8	600

Except that no water-closet shall discharge into a stack less than 3 inches in diameter. Not more than three water-closets or their equivalent in fixture units shall discharge into a 3 inch stack from one 3 inch branch, and not more than two such branches may connect to a 3 inch stack at the same point or level.

It is recommended that the required size of main vents or vent stacks shall be determined on the basis of the size of the soil or waste stacks, the number of fixtures or fixture units connected to the soil or waste stack, and the developed length of the main vent or vent stack in accordance with the following tables:

WASTE STACK

Diameter of Stack (Inches)	Fixture Units on Stack	Dimensions of Vent: Diameter	Dimensions of Vent: Maximum Length
		Inches	*Feet*
1¼	1	1¼	45
1½	2-8	1¼	35
1½	2-8	1½	50
2	9-18	1¼	30
2	9-18	1½	60
2	9-18	2	75
2½	19-36	1¼	25
2½	19-36	1½	45
2½	19-36	2	60
2½	19-36	2½	105

SOIL OR WASTE STACK

Diameter of Stack (Inches)	Fixture units on stack	Water-closets only	Dimensions of vent: Diameter	Dimensions of vent: Maximum length
			Inches	*Feet*
3	6- 18	1- 3	1½	20
3	6- 18	1- 3	2	60
3	19- 42	4- 7	2	45
3	19- 42	4- 7	2½	150
3	43- 72	8- 12	2	30
3	43- 72	8- 12	2½	90
3	43- 72	8- 12	3	150
4	24- 42	4- 7	2	20
4	24- 42	4- 7	2½	45
4	24- 42	4- 7	3	100
4	43- 72	8- 12	2½	30
4	43- 72	8- 12	3	75
4	43- 72	8- 12	3½	150
4	43- 72	8- 12	4	300
4	73- 150	13- 25	3	60
4	73- 150	13- 25	3½	120
4	73- 150	13- 25	4	225
4	151- 300	26- 50	3	20
4	151- 300	26- 50	3½	50
4	151- 300	26- 50	4	100
4	151- 300	26- 50	5	[1] 225
5	301- 480	51- 80	2½	20
5	301- 480	51- 80	3	50
5	301- 480	51- 80	3½	100
5	301- 480	51- 80	4	175
5	301- 480	51- 80	5	[1] 300
5	481- 720	81-120	3½	25
5	481- 720	81-120	4	50
5	481- 720	81-120	5	125
5	481- 720	81-120	6	[1] 300
6	721- 840	121-140	3	20
6	721- 840	121-140	3½	40
6	721- 840	121-140	4	75
6	721- 840	121-140	5	225
6	721- 840	121-140	6	[1] 400
6	841-1,080	141-180	4	50
6	841-1,080	141-180	5	125
6	841-1,080	141-180	6	300
6	841-1,080	141-180	8	[1] 400
8	1,081-1,920	181-320	4	20
8	1,081-1,920	181-320	5	60
8	1,081-1,920	181-320	6	150
8	1,081-1,920	181-320	8	[1] 600

[1] Limit in height of soil stack but not in length of vent if greater is required.

Note.—The capacities and vent stack requirements for 4, 5, 6, and 8 inch soil stacks are extrapolated from data obtained for 2 and 3 inch stacks with liberal added factors of safety to provide for all necessary elbows or changes in direction in the vent stack. They are believed to represent safe installations and closer approximations to actual requirements than any tables now available.

The required size of sanitary house drains and sanitary house sewers shall be determined on the basis of the total number of fixture units drained by them in accordance with the following table:

SANITARY SYSTEM ONLY

Fixture units	Slope: ⅛ inch to 1 foot	Slope: ¼ inch to 1 foot	Slope: ½ inch to 1 foot	Number Water-closets or equivalent
diam. in				
6 to 12 inches	4	3	.....	1-2
13 to 24 do	4	4	3	3-4
25 to 72 do	6	5	4	5-12
73 to 300 do	8	6	5	13-50
301 to 720 do	8	8	6	51-120
721 to 1,080 do	10	10	8	121-180
1,081 to 1,920 do	12	12	10	181-320

The required sizes of storm-water house drains and house sewers and other lateral storm drains shall be determined on the basis of the total drained area in horizontal projection in accordance with the following table:

SIZE OF HOUSE DRAIN AND SEWER FOR STORM WATER ONLY

Number of square feet drained area	Slope: ⅛ inch to 1 foot	Slope: ¼ inch to 1 foot	Slope: ½ inch to 1 foot
diam. in			
Up to 90 inches	1½	1½	1½
91 to 400 do	3	2	2
401 to 660 do	3	3	2
661 to 1,200 do	4	3	3
1,201 to 1,800 do	4	4	3
1,801 to 2,500 do	5	4	4
2,501 to 4,100 do	5	5	4
4,101 to 4,600 do	6	5	5
4,601 to 5,300 do	6	6	5
5,301 to 7,500 do	8	6	6
7,501 to 11,100 do	8	8	6
11,101 to 15,700 do	10	8	8
15,701 to 19,500 do	10	10	8
19,501 to 24,800 do	12	10	8
24,801 to 31,000 do	12	12	10
31,001 to 44,000 do	14	12	10
44,001 to 60,000 do	14	14	12

No gutter or inside leader shall be of less size than the following:

Area of roof (in square feet)	Gutter *Inches*	Leader *Inches*
Up to 90	3	1½
91 to 270	4	2
271 to 810	4	2½
811 to 1,800	5	3
1,801 to 3,600	6	4
3,601 to 5,500	8	5
5,501 to 9,600	10	6

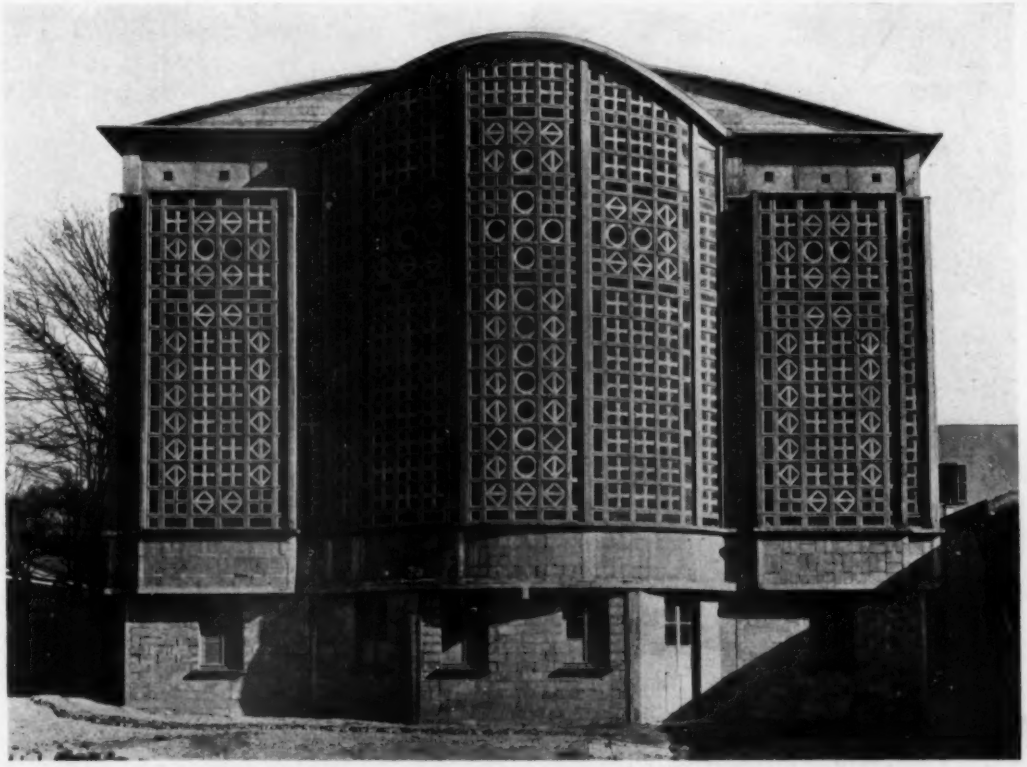
Outside leaders to the frost line shall be one size larger than required in the above table.

The section of the report devoted to the Physics of Plumbing Systems is extremely interesting and should be studied by those who design sanitary systems. Elaborate experiments were made on the effect of the inclination of the waste pipe, the relation of the trap to the fixture, and the relation of the soil pipe and vent pipe to the trap and fixture. Diagrams are given of approved design which are based upon these tests.

The report also includes very complete explanatory notes and comments and appendices.

The CHURCH *of* NOTRE DAME DU RAINCY

THE church of Notre Dame du Raincy is receiving international attention. This is to be expected because the building is unlike anything which has preceded it. Critics are by no means unanimous in their judgments of it and this is to be expected because many critics who have no precedents for comparison, are lost. A structure, architecturally considered, is good, bad or indifferent—it cannot be anything else regardless of its authorship, restrictions of ownership, cost or location. It stands alone as an individual expression and should so be considered without regard to anything that might have been done in the past. The church of Notre Dame du Raincy should receive such consideration.



EXTERIOR VIEW OF THE REAR. CHURCH OF NOTRE DAME DU RAINCY

A. & G. PERRET, ARCHITECTS

Concerning the architects, Messieurs Auguste and Gustave Perret, *The Architects' Journal,* London, quotes Frantz Jourdain as saying that an architect might also be an *entrepreneur,* a combination of which these brothers are a consummate example. "They started as contractors (they are so still), and became architects, good architects, afterwards. Together, they seem to stand half-way between the rigid theory, the traditional one that an architect is, and can be, but—an architect; and the other, launched in England by Mr. Wyndham Lewis two or three years ago, that to do any good these days, an architect should be the blending of an engineer and a painter. In a short period these gentlemen set up a new standard in modern French architecture, and besides their native abilities, they owe a great deal to their faith in this new version of an old material: ferro-concrete." Mons. A. Perret is quoted as follows: "Living architecture is one that faithfully expresses its own period. The architect shall seek examples in all domains of constructions; he shall lean towards those works which strictly subordinated to their use, and by means of a judicial handling of materials, shall reach beauty by

harmonious proportions, by the just distribution of their elements."

He went on, smiling and urbane: "Architectural education must, by all means, adapt itself to what are, truly, changed conditions. We shall never build as our predecessors did, a hundred years ago. Speed, economy, standardization are against the old methods. Even the aesthetic problem has evolved so quickly that architects must respond to its new demands; not consciously, but instinctively."

"I agree with you," proceeded Mons. A. Perret; "it seems inevitable that common sense will demand of an architect the possession of a sound technical education. The bulk of modern architecture tends to large volumes. You cannot ask of stones and bricks to perform miracles in spanning. Steel, of course, can, but to cover it with a veneer of stone or what-not, is a tempting fallacy. That is it: a technical education backed by a general culture, which is everything, from history to a sense of line and color."

The design and construction of the church of Notre Dame du Raincy were limited by an available sum of money and a desired seating capacity. These limitations were maintained, and to do so, the design was made to conform to certain economies in construction. The architects, being also constructors, were especially fitted to do this.

The interior of the church has a certain clarity which is unusual and unexpected. This is secured by making the entire exterior wall above the dado, of tracery. The skillful grading of the degree of the transparency of the glass with increasing brightness towards the east together with the construction of the ceiling, involuntarily draw the eye to the essential thing in a church —the altar. The unusual number of slender columns, widely spaced, increases the apparent size of the room and this effect is further increased by the absence of applied ornaments.

To design reinforced concrete *as such* was a problem which confronted the architects and this has been done. This alone makes it an outstandingly honest design in comparison with the pseudo-stone construction and details that have rightfully classified reinforced concrete as an imitation except for hidden structural uses. There are many things about this building that are worthy of careful analysis as this scheme is but one application and it might lead to modifications in the usual designing of buildings for other purposes. Details of the reinforcing and of the pre-cast tracery panels have been published in *L'Architecture Vivante, Automne,* 1923, as well as the plans and other illustrations. From a brief communication received by THE AMERICAN ARCHITECT from the architects, is quoted:

"The church of Notre Dame du Raincy is, above all, a structure. The effort was made to harmoniously assemble the structural parts with a due regard to its architecture. The essential elements of the building are its structural frame and the filling in or the inclosing walls. The principal features of the frame are the columns and the arches which they support and the inclosing walls which consist of tracery panels with the ribs and reinforcing which unite and strengthen them.

"Four rows of columns support the ceiling arches on which the roof construction rests. Ordinarily the exterior row of columns would have been buried in the inclosing walls and each of them indicated by a slight projection. Or if completely covered by the walls, the location of the column would have to be indicated by some kind of ornament. In this building we have entirely isolated these columns from the wall, permitting the walls to pass freely outside of them.

"By exposing all of the columns free-standing there are four rows of columns seen instead of the usual two rows. This greater number of columns in sight tends greatly to increase the apparent size of the church with a sense of spaciousness and vastness. The small size of the columns, their great height and lack of distracting detail aid materially in producing this effect.

"The longitudinal barrel vault over the nave aids to indicate the purpose of the building as it leads the eye directly to the altar. The transverse barrel vaults are placed on both sides of the nave extending to the outer row of columns and are at a lower level than the longitudinal vault. The spring line of the longitudinal vault is at the topmost point of the transverse vaults resulting in wall spandrels which apparently convey the weight of the vaults to the tops of the columns. It can readily be seen that the use of the transverse vaults, with their numerous lines opposed to the uninterrupted lines of the longitudinal barrel vault, vastly increases the apparent length of the edifice.

"The round column was selected because its section is the one which is best adapted for a member subjected to compression. They were given an entasis to overcome the apparent increase of the diameter towards the top which is common to long columns having a constant diameter throughout. To make a round concrete column with an entasis is a difficult, and consequently costly, undertaking. In order to lessen the effect of the unavoidable imperfections which occur in the pouring of such columns, they were fluted so as to make less apparent the marks made by the vertical joints in the column forms. The fluting of the columns apparently increases their slenderness which is one of the indispensable elements of their beauty. The profile of the vaults was determined by

INTERIOR VIEW LOOKING TOWARDS THE ALTAR. CHURCH OF NOTRE DAME DU RAINCY

A. & G. PERRET, ARCHITECTS

forms that were in the possession of the builders and they were utilized as a matter of economy.

"The enclosing walls consist of the solid concrete blocks, the open tracery panels and the ribs and reinforcing which unites and strengthens them. The solid blocks are used where solid walls are necessary as in the basement, the dado below the pierced enclosing wall and other places. The tracery panel work is used instead of the usual window. It is made up of five models; the cross, the circle, the triangle, the square and the rectangle. These panels are all square or rectangular in outline and have a large groove around the outside edge. They were laid up like bricks or tile with a full mortar bed in the grooves in which were placed the reinforcing rods which tie them together. Projecting mouldings or ribs, which unite the panels, were placed continuously in some of the vertical and horizontal joints between the small panels. These projecting mouldings were made use of on the inside to relieve the flatness of the construction. The design of such a wall is capable of almost unlimited variation—as many times as five forms can be combined among themselves.

"Instead of supporting the tower by four great concrete columns which would have required ornamentation, each of these columns was made by assembling five columns similar to those used in the nave. These columns, made in this manner, were less expensive than the great columns which would have ordinarily been used. Devoid of added ornamentation, it is the simple element of construction which adorns."

PHYSICAL TESTS FOR DETERMINING THE QUALITY OF VARNISH

BY HENRY A. GARDNER

REQUESTS for information regarding the nature of "pure varnish" have recently been received. It is probable that the above term was loosely applied, as there are no well-recognized standards for the purity of oleo-resinous varnishes. Statements can be made that the oil and turpentine or other thinners used were pure, and that the gums or resins were of the highest quality. Such statements, however, might afford but little information to the user, since the cooking of the various materials to make a varnish, changes them into new complex masses that may have no relation to the original composition. For instance, if two batches of varnish made from the same ingredients in the same proportions were processed differently, there might be obtained two entirely different products. They would, of course, vary according to the nature of the processing and the skill of the maker.

Hence at present the only way to gauge the value of a varnish is by its physical properties, such as exposure test or elasticity test, drying time, appearance, brilliancy, hardness, water resistance, rubbing properties, etc., according to the type being considered. This modern conception of quality is embodied in the specifications of the U. S. Government "Federal Specifications Board" for exterior and interior varnishes, as recommended for use to all government departments, and which are finding especially wide application in the Navy and the Army. Copies of these specifications, giving complete requirements, methods of tests, etc., may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 5 cents each under the following titles:

U. S. Government Specification for Water-Resisting Spar Varnish

Circular No. 103, Bureau of Standards

U. S. Government Specification for Interior Varnish

Circular No. 117, Bureau of Standards

While varnishes are made in very large quantities to fully meet these specifications, not all high grade varnishes on the market are made to meet them in every requirement. Thus, for instance, where one special quality is desirable for general consumer trade, the varnish may not meet all the other requirements. In other words, some varnishes that do not meet all of the requirements of these specifications, may be of high quality for certain specific purposes. Physical properties, however, remain as the paramount factor in gauging the properties of varnishes.

An interesting record of varnish durability and its relation to physical tests is given in an article entitled "Varnish Studies. Relationships of Physical Tests and Chemical Composition to Durability," by Dr. W. T. Pearce of the North Dakota Agricultural College. In this article it is indicated that there may be very little relationship between composition and durability, but the results given by physical tests are often in close agreement with those obtained on exposure to the weather. This article, which was presented before the Section on Paint and Varnish Chemistry, of the American Chemical Society, in April, 1924, was published in the July issue of *Industrial and Engineering Chemistry,* and reprinted by permission as a special circular of the Scientific Section, Institute of Paint and Varnish Research, 2201 New York Ave., N. W. Washington, D. C., which is now available for distribution.

EFFECT OF STORAGE OF CEMENT

MUCH praise is due the Portland Cement Association for its efforts to secure complete information about Portland Cement. Investigations covering a considerable number of years have been conducted at the Structural Materials Research Laboratory, Lewis Institute, Chicago. This work is being carried on under the direction of Professor Duff A. Abrams, who has become an accepted authority on matters pertaining to the physical and mechanical properties of cement.

Tests on the effect of storage of cement were instituted in November, 1916, and completed in November, 1923. The results are published in Bulletin 6 of the Laboratory.

The following are the principal conclusions from this investigation:

1. The average strength of the concrete (mix, 1:5 by volume, relative consistency 1.00 tested in 6 by 12-in. cylinders, cured in a damp condition) made from the cement as received was 1470 lb. per sq. in. at 7 days; 3020 at 28 days; 4410 at 3 mo.; 4680 at 1 yr.; 4910 at 2 yr.; and 6030 at 5 yr. The increase in strength of concrete with age shown by these tests was approximately proportional to the logarithm of the age, which is characteristic of concrete cured in a damp place.

2. There was an appreciable loss in strength of Portland cement due to storage in small lots in sacks for all conditions covered by these tests; the loss was greatest for the cements stored in the shed, and least for those stored in the Laboratory. Basement storage was almost as severe as outdoors. The loss in strength was greater for the first 3 mo. of storage than for the later 3 mo periods. For example, the 28-day tests for cement stored in shed showed a loss of about 500 lb. per sq. in. for the first 3-mo. storage and about 250 lb. for the second 3 mo. Still smaller losses were found for later 3-mo. periods. In general the concrete strengths for the cements stored in the shed 1 yr. and longer were about 80 per cent of those for cement stored in the Laboratory. The deterioration shown by these tests was probably greater than would be found in a larger lot of cement stored in sacks under similar conditions.*

3. The effect of storage of cement was found to be largely a question of the *age at which concrete or mortar tests were made.* The early tests showed a much greater loss in strength due to storage of cement than tests at later ages. It is of the utmost importance that the strength of the cement was not *permanently* reduced as shown by the early tests; cements stored in shed for 3 mo. gave an average "strength-ratio" of 73 per cent (as compared to the original strength of concrete) when tested at 7 days, 75 per cent at 28 days, and 84 per cent when tested at 6 mo. to 2 yr. Similar relations were found for the other conditions of storage.

4. After storage of cement in shed for 3 mo. the average strength-ratio for the ages at which tests were made was 80 per cent; after storage for 6 mo., 72 per cent; 1 yr. 60 per cent; 2 yr., 46 per cent; and 4½ yr. 45 per cent.

5. Two brands of paper cement sacks gave results which did not differ materially from cloth sacks when used for storing cement for periods up to 4½ yr.

6. A thin covering of Portland cement or hydrated lime over cement in cloth sacks showed some advantage, but not sufficient to justify the cost of this method of storage.

7. There was no essential discrepancy between the indications of the compression tests of 1-5 concrete in the form of 6 by 12-in. cylinders and the tests of 1:3 standard-sand mortar in 2 by 4-in. cylinders.

8. The time of setting of cement increased up to storage periods of 1 or 2 yr., and decreased for the longer periods. At the beginning of the tests the initial time of setting was about 4½ hr., after storage for 1 yr. about 7 hr.; for final time of setting the corresponding values were about 8 and 12 hr.

9. The normal consistency of cement was only slightly affected by storage up to 2 yr.

10. It appears that the deterioration of cement in storage is due to absorption of atmospheric moisture, which causes a partial hydration, which in turn, exhibits itself in the lower strength-ratios for concrete, particularly at the early ages.

11. Only a negligible quantity of lumps formed up to 1-yr. storage; these were soft and readily broken. The lumps found in the sacks after storage for 2 yr. and over were generally quite hard; in the shed-stored cements lumps amounted to as much as 30 to 75 per cent of the cement. Lumps are generally discarded before testing the cement.

Concrete and mortar tests of cement and pulverized lumps from cement stored for 7 yr. showed the cement to have about 30 per cent of its normal strength and the lumps 35 per cent of the strength of the cement; in other words the "lump cement" gave 10 per cent of the original concrete strength. For these tests the lumps were pulverized to such a fineness that all passed a 28-mesh sieve and about 45 per cent was retained on a 200 sieve. Earlier tests of broken lumps screened from cement and tested shortly after it was received at the Laboratory gave strengths in concrete about 50 per cent of that made with cement from the same sacks.

**Tests on bin-stored cement now under way have shown an increase in concrete and mortar strength for 4-mo. storage particularly in the 7 and 28-day tests; beyond this time a* DECREASE *was found, but up to 1½-yr. storage the strength of the cement had not, in general, decreased below that obtained in the initial tests, which were made only a few days after grinding the cement.*

SEASONAL OPERATION

THE subject of seasonal operation in the building and construction industry has been given intensive consideration by the President's Conference on Unemployment. A committee of this conference has made a report of conditions in the building industry as influenced by the seasons. A summary of this report, with a foreword by Herbert Hoover, is issued by the Department of Commerce and can be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C., at a cost of five cents. In this summary the relation of each element of the building industry to this subject is clearly outlined and suggestions are made for their co-operation. In this study the place of the different types and ownerships of buildings is shown in relation to the other factors. For this reason the report not only appeals to architects, but also to every other person interested in the building industry, including the owners.

LIME STUCCO

STUCCO, much used in ancient building and in early modern construction, is making a renewed demand on the attention of the architect. Those who seek economy of construction, durability of surface, fire resistance, low maintenance cost, improvement and repair of old or otherwise unsightly surfaces, and certain pleasing artistic effects, find all these elements to a notable degree in stucco.

The materials of its composition are widely distributed and conveniently available. It may be applied on a variety of surfaces either as a unit part of construction or as an overcoat on lath, or directly upon brick, stone, or tile surfaces. It fits into new or remodeled construction equally well.

The term "stucco," which was formerly used in referring to ornamental plaster work, whether interior or exterior, is now confined to exterior plastering, either plain or ornamental. It represents a type of construction and may be made of different materials, as indicated by the rather exact definition laid down by the U. S. Bureau of Standards in Technologic Paper No. 70, as follows:

"The word 'stucco' as used in this report may be defined as a material used in a plastic state to form a hard coating for the exterior walls or other exterior surfaces of any building or structure. 'Stucco,' as here used, is a mixture of one or more cementitious materials, with sand or other fillers and with or without other materials, such as hair and coloring matter. The word 'stucco' is used without regard to the composition of the material, defining only its use and location of its use, as contrasted with the words 'plaster' and 'mortar.'"

The character of the stucco as to both color and structure will vary within certain limits, depending on the nature of the basic materials employed, and the character may be further varied by the properties of the sand and coarse aggregate.

This bulletin is particularly concerned with the type of stucco in which lime is used as the dominant cementitious material. The following formal definition of lime stucco may be used as the basis for discussion in this bulletin:*

Lime stucco is a mixture of properly prepared lime putty or paste, sand, and water, with or without the addition of a small percentage of cement. Hair or fibre may be added to assist in forming the key, depending on the style and character of the background. Coloring matter may be added to obtain the tone desired, although more frequently color effects are obtained through the use of selected sands. Different colored (fine or coarse) aggregates may be used for obtaining various effects of color and surface texture.

The history of the use of stucco in all parts of the world is set forth in a resumé which is illustrated by examples taken from most of these countries. This feature is extremely interesting and well establishes the fact of its durability in all climates. It is evidence of the most convincing kind that when stucco is properly made and applied it is a valuable material. In addition to the advantage of the durability of lime stucco as established by historical records, there is the advantage of its availability. Practically every section of this country is supplied with lime from nearby sources.

There is an increasing tendency in this country towards the use of color in stucco. Lime offers unlimited possibilities for obtaining variety in color effects because of its whiteness. Because of this it will require less pigment to secure the desired color than would be necessary if the stucco was of a gray or other dark tint. According to J. J. Earley, more coloring material may be added to lime without impairing its binding value, which makes possible certain of the deeper and richer colors unobtainable in any other material.

Freedom from cracking is one of the most important characteristics of lime stucco. The reasons for this and the methods for securing this result are very clearly set forth. Initial hardening is secured by gauging limestone stucco with Portland cement. It then finally hardens more slowly owing to the evaporation of water and carbonation of the lime. Too rapid drying is frequently the cause of initial cracking.

The essential requirements of modern practice in designing for stucco which are given in this bulletin are based largely upon the report of the Committee on Treatment of Concrete Surfaces of the American Concrete Institute (1920). The requirements for a suitable foundation consisting of masonry walls or lath are explained, as well as data concerning the preparation of the mortar. A complete form of specification is given which defines the quality of the materials and includes tables giving parts, per volume, of the mortars required for the different foundations. This is set forth in a very usable manner.

The different surface finishes are specified and illustrated by fifteen half-tone engravings. A shorter form of specification is given in which are eliminated many of the details given in the longer form by referring to certain specifications adopted by the National Lime Association, the American Society for Testing Materials and other organizations which approve standard specifications.

* *Lime Stucco, Bulletin 307-A, National Lime Association, 918 G Street, N. W., Washington, D. C.*

The LAW *as to* ARCHITECTURE

BY CLINTON H. BLAKE, *Jr., of the New York Bar*

A QUERY has come to me which, while it does not raise an entirely legal question, has to do, nevertheless with a situation which may very readily arise in the practice of any architectural firm.

The question has to do with the rights of the estate of a deceased partner in the firm work. In the case of many firms, especially the larger ones, the copartnership agreement provides particularly, and in considerable detail, for the contingency of the death of any partner and for the rights of the surviving partners in that event. Many partnerships, however, make no provision for this contingency, and on the death of one partner, the survivor is presented with the problem of deciding what is equitable on the adjustment which he is required to make on firm business as between himself and the estate of his deceased partner.

The case which has been presented to me was of this nature. A partnership existed between A and B under a simple agreement to the effect that all firm expenses were first to be paid, and that the net profits were then to be distributed, 55% to A and 45% to B. After the partnership had operated for some years, B died and A continued with the work of the office. At the time of B's death, the jobs in the office were in various states of completion. Some had not been started, some were about half done and some were nearly completed.

It is not possible to lay down any unvarying legal rule defining exactly what proportion of the fees under these conditions should be paid to B's estate and how the equities as between B and his surviving partner shall be determined.

In the entire absence of any special agreement covering this situation, it would seem fair and proper that the following general rules should apply:—On work actually completed at the time of B's death, B's estate should receive his full 45% interest. On work partly completed at the time of B's death, the proportion of the fee represented by the work then done should be ascertained and B's estate should be entitled to 45% of this fee. On work not started at the time of B's death, but performed and completed subsequent thereto, no allowance would be made to B's estate.

This last rule is naturally subject to whatever modification the facts in a given case may warrant. Even though a job had not been started at the time of B's death, if the client had been brought in by B, the surviving partner might well feel it fair to make some reasonable allowance to B's estate. On work coming in after B's death from old clients originally brought in by B, some similar allowance might under certain conditions be fair. Manifestly, however, there will not be the same reason for an allowance on clients who, although originally brought in by B, have nevertheless dealt for a long period with both partners, as there would be on the work of a new client brought in by B just prior to his death. It is equally manifest that in any event there must be a limit to the period over which the allowance to B's estate shall continue, unless, of course, his estate continues in any way to share in the expense of the conduct of the practice. If it does this, an entirely different situation would be presented, and it would in effect, be necessary to create a new partnership between the surviving partner and the representatives of B's estate.

In all of these cases of adjustments between partners, the particular facts which have applied to the dealings of the parties, the relations which have existed between them and the basis on which they have conducted the partnership during the years that they have been associated as partners, will necessarily be important elements in determining the equities between the surviving partner and the estate of the deceased partner. The obvious way in which to avoid questions such as the foregoing arising is for the partners in the first instance to arrive at an agreement covering the contingency of the dissolution of the firm, either by the death of one of them or for any other reason. In justice to both partners, a preliminary agreement covering this point should be entered into, so that each may know just what rights his estate will have in the partnership practice, in the event of his death.

It is a very simple matter for partners to discount and cover future contingencies to this extent. By so doing, they will avoid in all probability much of uncertainty and future difficulties. There is no point in inviting disputes between the estate of one partner and the survivor, when a few simple paragraphs agreed to in the beginning will make such disputes impossible.

LEGAL DECISIONS

THE construction contract provided that extra work should be performed only on the order of the engineers in writing; that, if the contractor considered any work an extra, he should ask for a written ruling immediately; that if he were not

satisfied with the ruling, he should file a protest, and that his failure to file such protest within ten days should be considered as an acceptance of the ruling.

The contractor, under this contract, performed work which he claimed should be considered an extra. The engineers ruled adversely. He filed no protest to the ruling which they submitted. The contract provided that "no additional compensation will be allowed, if unusual difficulties are encountered."

The court held that the contractor, by failing to file a protest, must be considered to have accepted the ruling of the engineers, and that the cost of various experiments conducted by him in the construction of the work could not be allowed as additional compensation; that inasmuch as the offer to bidders on the work warned them to examine the location and acquaint themselves with existing conditions, the contractor, having accepted the work, cannot complain of the character and amount of work required in connection with the erection of the foundation.

O'Leary v. Board of Commissioners, 91 *Southern* 139.

A CONTRACT provided in the usual way for the withholding of money to cover liens and the claims of laborers and materialmen. It appeared that such liens and claims actually had been made and existed. The question arose, whether the estimate of the architect as to these should be conclusive in deciding the right of the contractor to receive payment. The court held that an estimate of an architect, under such conditions, is not conclusive.

(Editor's Note: Parties may, of course, by contract make such provisions with respect to circumstances such as these as they deem proper. If a contract should provide that, in the event of the filing of liens or other claims, the estimate of the architect with respect to the correctness of the claims or the amount of money to be withheld should be conclusive in determining the right of the contractor to receive payment, the amount to be received by him and the liability of the owner on his part to make payment, the parties would be bound by such a provision and the estimate of the architect would be deemed to be conclusive accordingly. In considering legal decisions of this kind, the architect must always bear in mind the fact that, as a rule, they are rendered in the absence of a specific contract covering the case and that, where such a contract exists, its terms will be valid and applied by the court so long as the contract is not for any reason void and unenforcible.)

A CONTRACT provided that the job should be performed by the use of the material specified. It appeared that other and different materials were to some extent substituted in the work done. The question arose as to whether there had been a substantial compliance with the terms of the contract and whether the owner was entitled to damages for the failure to use the material specified. The court held that the fact that the other materials which had been substituted might be shown to be just as good as those specified in the contract or the fact that it was customary to make use of such substituted materials in jobs of a similar nature, would not be sufficient to establish a substantial compliance with the terms of the contract, and that the owner would be entitled to damages accordingly.

Maner v Clark-Stewart Co. (*Georgia Court of Appeals*) 109 *South Eastern* 178.

BEAUX-ARTS INSTITUTE *of* DESIGN

Official Notification of Awards

Judgment of May 20th, 1924

CLASS "A" AND "B" ARCHAEOLOGY—V PROJET

"THE ENTRANCE MOTIVE OF A FRANCIS I CHATEAU"

The period of Francis I was one of transition in which Renaissance details were grafted on Gothic forms. The predominating characteristic of the style was a picturesqueness of massing that was achieved by a skillful composition of high roofs, dormers, towers, and chimneys. It was an epoch of palace-building. The plan of the country palaces or chateaux resembled feudal castles, in which the building was grouped around a court. Although as a rule the windows of the principal rooms faced on the courts, occasionally they were opened out toward the exterior.

In this problem the main entrance to a chateau and its central court occurs in the center of the principal facade. This entrance should consist of a single vaulted archway between 10'-0" and 12'-0" wide, which, if desired, may be accompanied by a smaller doorway on the side as in the chateau at Blois. The facade in which it occurs consists of two principal stories and a high roof.

JURY OF AWARDS:—H. O. Milliken, W. Warren, E. Necarsulmer, E. P. Mellon and F. C. Farley.

NUMBER OF DRAWINGS SUBMITTED:—8.

AWARDS:—

MENTION:—C. D. Badgeley, S. F. Edson, R. H. Walter, and P. V. Obninsky, Columbia University, N. Y. C.; S. C. Haight and W. H. Schilling, Yale Univ., New Haven.

CLASS "A" AND "B" ARCHAEOLOGY—V MEASURED DRAWINGS

JURY OF AWARDS:—H. O. Milliken, W. Warren, E. Necarsulmer, E. P. Mellon, F. C. Farley and A. Phillips.

NUMBER OF DRAWINGS SUBMITTED:—2.

SUBJECT:—Entrance—Albany Boys Academy—1815.

AWARD:—

MENTION:—A. Hoyland, Syracuse Univ., Syracuse.

SUBJECT:—Old House in New Haven, Connecticut, now on Trumbull Street.

AWARD:—

MENTION:—V. M. Reynal, Yale Univ., New Haven.

THE EMERSON PRIZE

The gift of Professor William Emerson, offered for the best solution of a decorative problem.

PRIZE—$50.00

PROGRAM

"A CHAPEL SCREEN"

A small chapel forms the end of the side aisle in a large church. A screen, in the center of which is the door or gate to the chapel, separates it from the church. The craftsmanship in an elaborate screen of this sort is always of a very high order, and the range of materials that can be used is practically unlimited, including stone, marble, mosaic, wood and all of the metals.

The clear opening between the two stone piers in which this screen occurs, is 20'-0".

JURY OF AWARDS FOR THE EMERSON PRIZE COMPETITION:—H. O. Milliken. W. Warren, E. P. Mellon, J. A. Gurd, E. Necarsulmer, C. I. Berg, A. Phillips, and F. C. Hirons.

JURY FOR THE AWARDING OF THE EMERSON PRIZE:—H. O. Milliken, W. Warren, E. P. Mellon, J. A. Gurd, E. Necarsulmer, C. I. Berg, and A. Phillips.

NUMBER OF DRAWINGS SUBMITTED:—34.

AWARDS:—

PRIZE:—T. P. Yang, University of Pennsylvania, Phila.

FIRST MEDAL:—T. P. Yang and R. Ruhnka, Univ. of Pennsylvania, Phila.

SECOND MEDAL:—N. L. Flint, Armour Inst. of Tech., Chicago; Elsie Pollak, Columbia Univ., N. Y. C.; A. Thormin, Carnegie Inst. of Tech., Pitts.; E. R. Duckering and G. P. Turner, Univ. of Pennsylvania, Phila.

FIRST MENTION:—A. E. Nicolai, Armour Inst. of Tech., Chicago; J. A. Fernandez, Columbia, University, N. Y. C.; A. H. Emerick, Cornell Univ., Ithaca; V. Pribil, Atelier Corbett-Koyl, N. Y. C.; H. Cunin, E. Snyder, and H. C. Wood, Univ. of Pennsylvania, Phila.; W. E. Armantrout, Univ. of Illinois, Urbana.

SECOND MENTION:—H. G. Scheonthal and S. M. Shaw, Columbia University, N. Y. C.; A. R. Martin, Chicago Atelier, Chicago; A. M. Ham, Carnegie Inst. of Tech., Pitts.; E. R. MacDonald, San Francisco Architectural Club, San Francisco.

CLASS "A"—V PROJET

"AN ARMY POST"

On a broad plain near a frontier town there is to be established an Army Post which, under normal conditions, will be garrisoned by one regiment of infantry. Proper attention shall be paid to the soldiers' health, comfort and instruction, by providing ample space, light and air, plenty of trees, good roads, depots and modern buildings laid out in such a manner as to preserve the integrity of the various units, and to make a fitting background for military services and ceremonies.

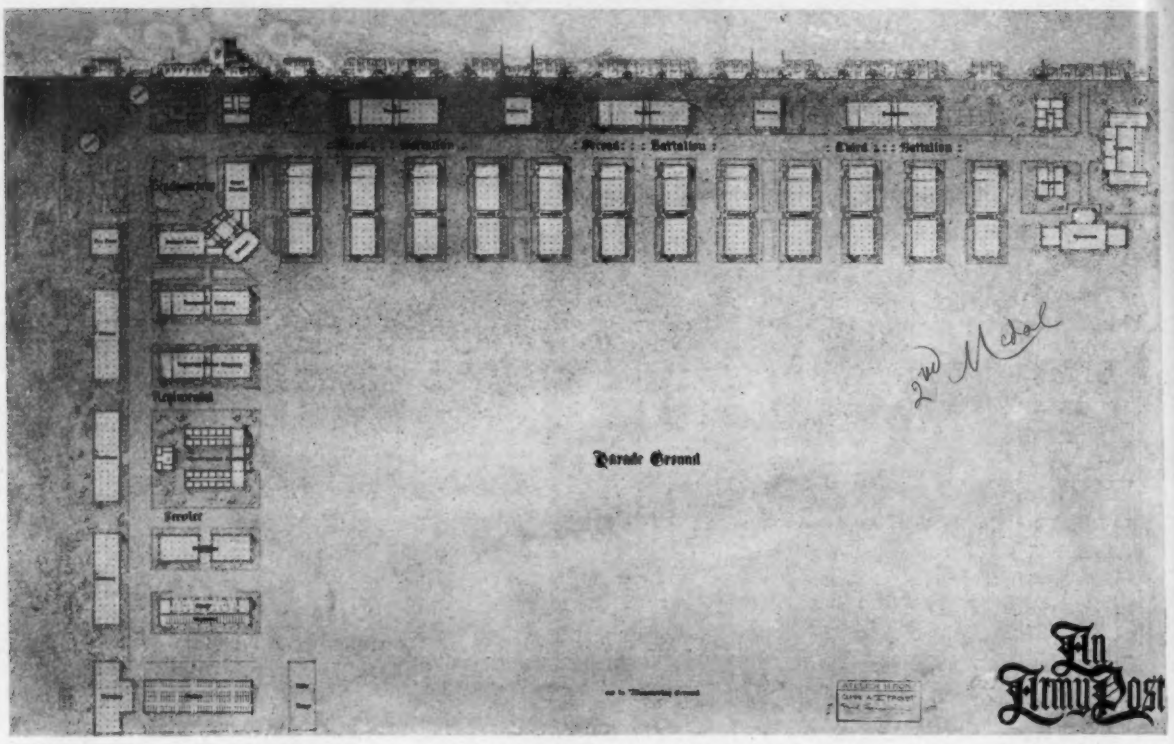
There is to be, as usual, a Post Headquarters unit permanently located here which does not change when the regiment, and the administration which is part of their organization, moves to another post.

The requirements of the program are:

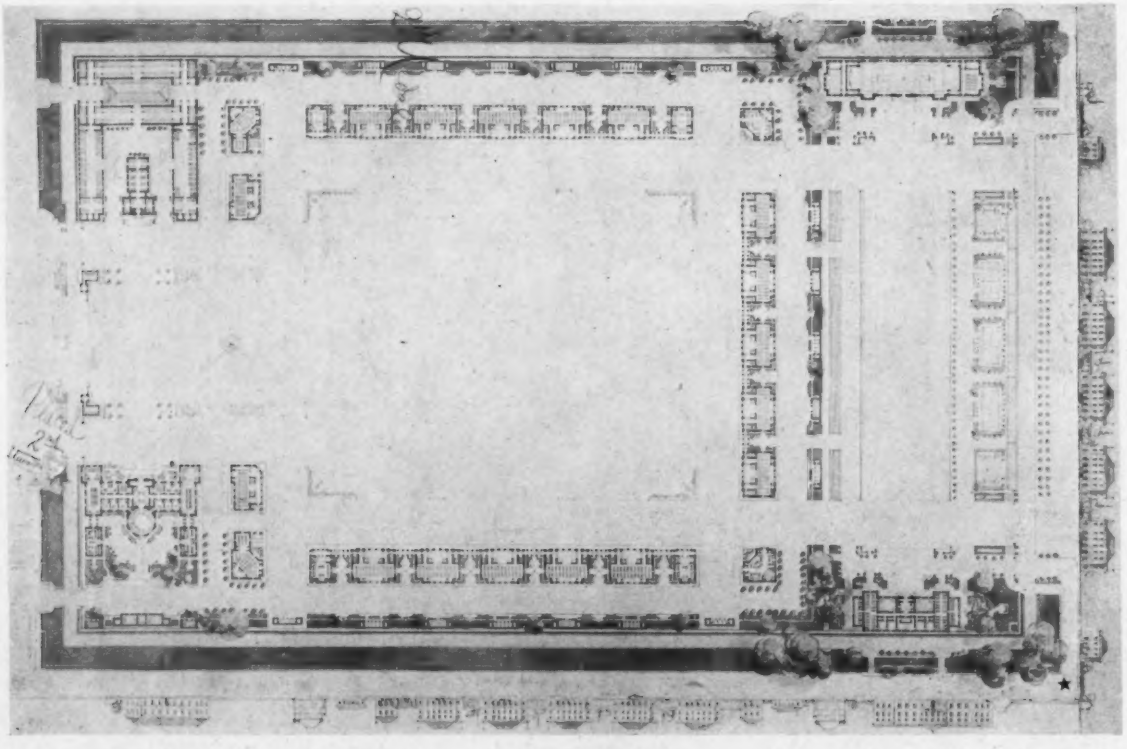
1. Administration. This includes (in one or more buildings): Reception room and offices for the Colonel and regimental staff; Small military library; Room for court martials; Mess room for officers, with kitchens, etc.
2. Post Headquarters. This includes (in as many buildings as necessary): A small office building; Barracks for a permanent quartermasters department of 25 men; Depots for clothing, arms, provisions, warehouses, workshops, fire department, etc.; Stables for 85 horses and 24 mules; Accommodations for 27 escort wagons, 8 autos, 2 trucks.
3. Regimental Service Company and Headquarters Barracks (there are 200 men in each of these 2 companies).
4. Barracks for 3 Battalions. (In as many buildings as necessary). Each battalion includes 1 headquarters company, 3 rifle companies and 1 machine gun company. Each company has approximately 200 men divided into 3 platoons.
5. Post Hospital. Which should be isolated, with accommodations for 60 beds, 3 surgeons and 35 men.
6. A Gymnasium and an Athletic Field; rifle and pistol ranges.
7. A small Guardhouse, near the entrance.
8. A large open space for ceremonies and close order formations.

The property set aside for this group measures 1000 feet by 1600 feet. The large manoeuvring ground and the residential quarters for officers are outside of this composition and are not a part of the program.

XUM



P. SIMONSEN — SECOND MEDAL — ATELIER HIRONS



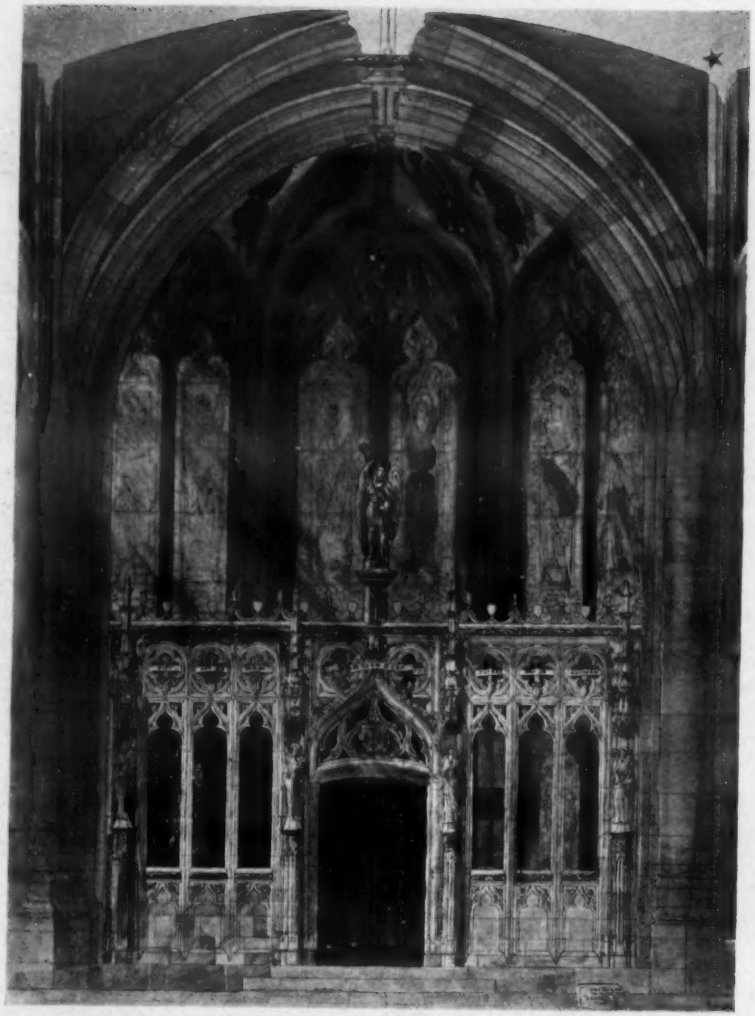
C. J. PELLEGRINI — SECOND MEDAL — CARNEGIE INSTITUTE

CLASS "A"–V PROJET—AN ARMY POST

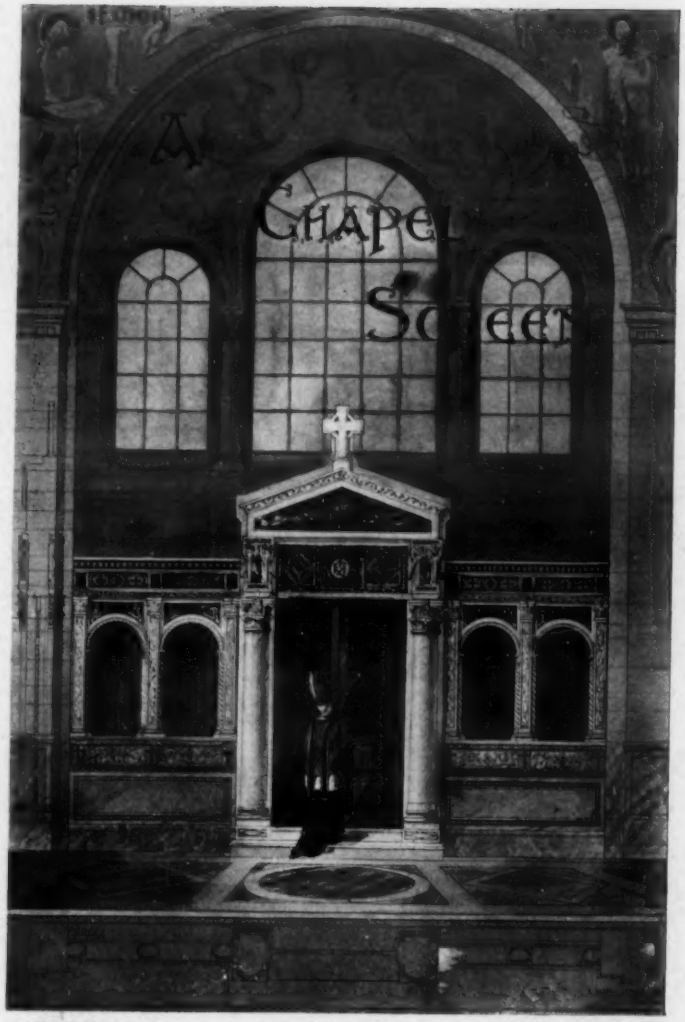
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

T. P. YANG PRIZE WINNER AND FIRST MEDAL UNIV. OF PENNA.

EMERSON PRIZE COMPETITION—A CHAPEL SCREEN
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN



R. RUHNKA FIRST MEDAL UNIV. OF PENNA.



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EMERSON PRIZE COMPETITION—A CHAPEL SCREEN

STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

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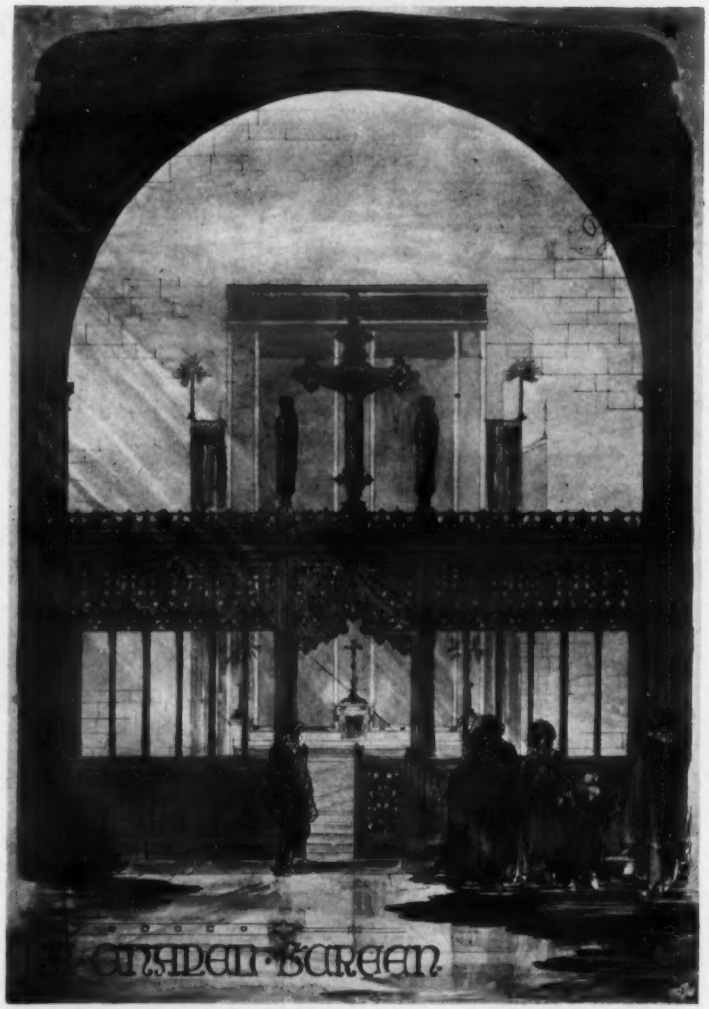

N. L. FLINT SECOND MEDAL ARMOUR INSTITUTE

E. R. DUCKERING SECOND MEDAL UNIV. OF PENNA.

EMERSON PRIZE COMPETITION—A CHAPEL SCREEN

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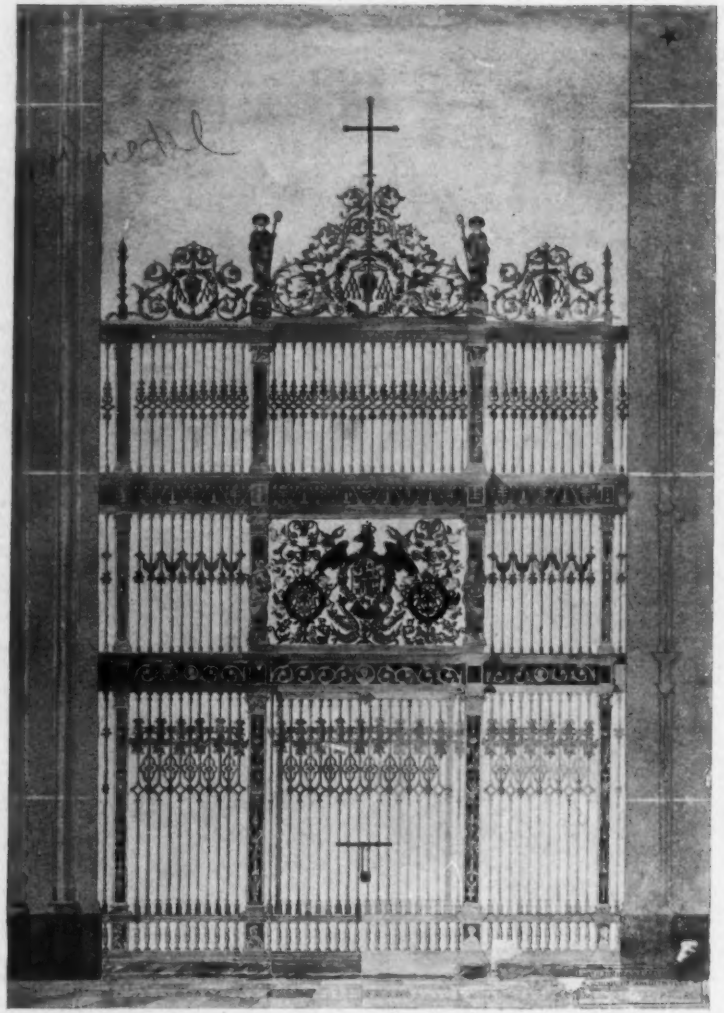


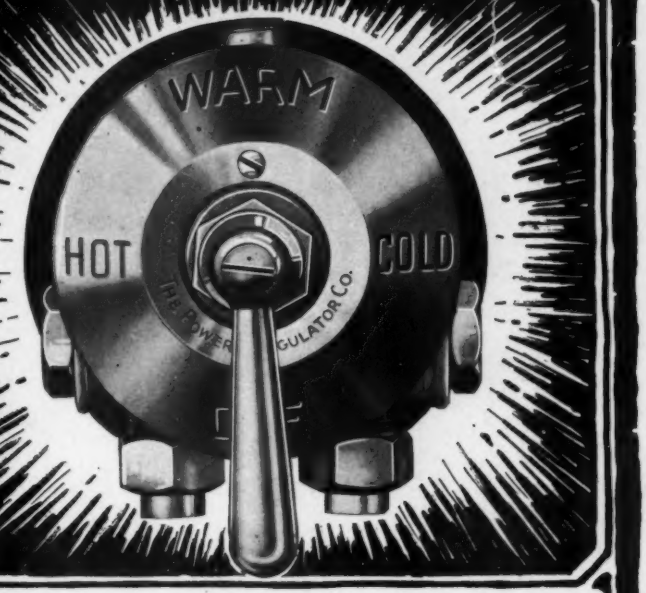
ELSIE POLLAK SECOND MEDAL COLUMBIA UNIV.

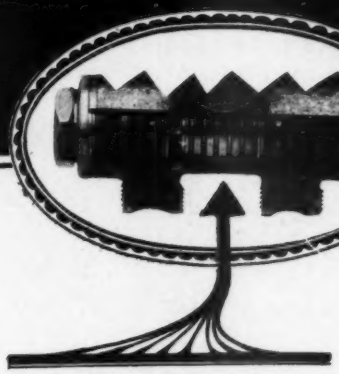
G. P. TURNER SECOND MEDAL UNIV. OF PENNA.

EMERSON PRIZE COMPETITION—A CHAPEL SCREEN

STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

The POWERS SHOWER MIXER





-a total eclipse!

HERE—at last—is the mixer every user of a shower bath has long wanted! It is a new and entirely different type of mixer. **It is not thermostatic,** yet it has the safety feature found in thermostatic mixers, with less complication and at a lower cost.

Because of its Pressure Equalizing Valve, a Powers Mixer surpasses and casts into the shade all past attempts to protect bathers from sudden "shots" of cold and scalding HOT water. It IS absolutely Scald-Proof!

Pressure Equalizing Valve

Without this feature, a Powers mixer would simply be *another* shower mixer.

This valve is a floating piston which controls and equalizes the pressures of hot and cold water before they enter the mixing chamber.

No matter how violently water pressures vary, it provides the positive safeguard against scalding and unexpected temperature changes.

Reduces Repair Troubles

This mixer has no thermostatic coils, no diaphragms, and no composition valve seat washers on hot water inlet to wear out and need frequent repairs. Its sturdy all-metal construction insures a durability not equalled by any other mixer. Comes in 4 styles, for exposed and concealed piping.

FREE

Write for copy of our book "How to Prevent Scalding and Repair Troubles in Shower Baths."

THE POWERS REGULATOR COMPANY

33 years of specialization in automatic temperature control

2797 Greenview Avenue, Chicago

ATLANTA, BALTIMORE, BOSTON, BUFFALO, BUTTE, MONT., CHARLOTTE, N. C., CINCINNATI, CLEVELAND, DENVER, DES MOINES, DETROIT, EL PASO, HOUSTON, INDIANAPOLIS, KANSAS CITY, LOS ANGELES, MILWAUKEE, MINNEAPOLIS, NASHVILLE, NEW ORLEANS, NEW YORK, PHILADELPHIA, PITTSBURGH, PORTLAND, ROCHESTER, ST. LOUIS, SAN FRANCISCO, SEATTLE

CANADIAN OFFICES: TORONTO, MONTREAL, HALIFAX, WINNIPEG, CALGARY, VANCOUVER

2143

PERSONALS

Raymond M. Marlier, architect, announces the removal of his office to Suite 1001, Empire Building, Pittsburgh, Pa.

F. Rosenheim, F. A. I. A., announces the removal of his offices to Suite 515, Broadway Arcade Building, Los Angeles, Cal.

Shea & Shea, architects, have moved their offices to 454 Montgomery Street, between California and Sacramento Streets, San Francisco, Cal.

Arthur G. Tafel, architect, has moved his office from 304-307 Colman Building into his new Studio Building at 140 South Third Street, Louisville, Ky.

D. M. Rothenberger, architect, formerly at 140 North Queen Street, Lancaster, Pa., is now occupying offices at 440-A Court Street, Reading, Pa.

Roy G. Pratt, architect, has moved his office from the Bailey Building to 801 Franklin Trust Building, Fifteenth and Chestnut Streets, Philadelphia, Pa. Manufacturers are requested to send catalogs and samples.

Louis N. Crawford and J. Carter Pennington have opened an office for the general practice of architecture at 15 Wade Building, San Luis Obispo, Cal., where they would be pleased to receive manufacturers' catalogs and samples.

J. Edward Birmingham, architect, has reopened his office at 45 Warburton Avenue, Yonkers, N. Y., for the general practice of architecture. Manufacturers are requested to send current catalogs and samples.

Ernest A. Grunsfeld, Jr., A. I. A. and Eugene Henry Klaber, A. I. A., announce that they have opened offices for the general practice of architecture at 81 East Madison Street, Corner of Michigan Boulevard, Chicago, Ill. Manufacturers' catalogs and samples are requested.

Alfred Granger, Elmo C. Lowe and John C. Bollenbacher have formed a partnership to continue the practice of the profession of architecture under the name of Granger, Lowe and Bollenbacher, with offices at 332 South LaSalle Street, Chicago, Ill.

THE CLEVELAND SCHOOL OF ARCHITECTURE

THE Cleveland School of Architecture, one of the newest schools in the field of architectural education, has, we learn, set out in its work under extremely favorable auspices. Mr. Abram Garfield is the President and Charles Morris, Secretary and Treasurer.

Mr. Francis R. Bacon, at one time connected with the editorial staff of THE AMERICAN ARCHITECT, is Director of the School.

HISTORIC LIMESTONE

A NUMBER of Egyptian stone relics have been received in this country, and will form part of an interesting collection of stone types in the world that is being assembled by the Indiana Limestone Quarrymen's Association. A considerable amount of archaeological interest surrounds these relics, as they were hewn and used between 1350-1325 B. C. and are therefore approximately 3300 years old.

FRAGMENT OF CARVED WHITE LIMESTONE FROM EL AMARNA. THE HIEROGLYPHICS AT LEFT MEAN "ETERNALLY"

The fragment illustrated is of white limestone. The word "Eternally" is written in the hieroglyphics at the left. This specimen formed a part of a decorative group in ancient El Amarna.

A WAKEFIELD EXPERIMENT

THE Wakefield Corporation, comments *The Architect*, London, is making a most interesting experiment in building which aims at the substitution of oak framing filled in with stone slabs for brickwork. The Wakefield Corporation has completed two houses and contracted for twenty more. This method of building is, of course, a reversion to an old type, except that lath and plaster work or brickwork are abandoned in favor of sawn stone slabs. The slabs are backed

HOTEL CARPENTER, Manchester, N. H.: Herbert W. Rhodes, Portland, Me., Architect; Crane Co., Boston, Jobbers; John H. Stevens, Manchester, Plumber

KOHLER

And the HOTEL CARPENTER

New England's fine old buildings must compete for admiration with her fine new ones—such as the Hotel Carpenter of Manchester, New Hampshire.

The carefully chosen appointments of this hotel include one hundred and eighteen Kohler "Viceroy" built-in baths of the recess pattern.

* * *

The high opinion which architects have of Kohler Enameled Plumbing Ware is attributable partly to the beauty of Kohler designs, but chiefly, no doubt, to the well-known durability, hardness, and uniform whiteness of the Kohler enamel.

Our *pride-mark*, the name "Kohler" permanently but unobtrusively fused into the enamel of every Kohler fixture, enables the public to recognize and appreciate the quality provided by the architect who specifies this fine ware.

KOHLER OF KOHLER

Kohler Co., *Founded 1873*, Kohler, Wisconsin
Shipping Point, Sheboygan, Wisconsin
BRANCHES IN PRINCIPAL CITIES

MANUFACTURERS OF ENAMELED PLUMBING WARE AND KOHLER AUTOMATIC POWER AND LIGHT 110 VOLT D. C.

with a bituminous compound which renders the interior completely watertight and serves as an adhesive lining for any interior finish, whether plaster or boarding, the latter having the advantage of obviating delay. The foundations are of concrete and the chimney blocks of concrete or brickwork. The Wakefield Corporation is erecting on the same estate 200 concrete houses carried out on a well known system, so that it is obtaining actual experience in the efficacy of new methods.

We hope that the very interesting experiment it is making will serve as a stimulus elsewhere, as it is only by such experiments that trustworthy experience as regards time and cost can be obtained.

ARCHITECTS AND ARTISTS

THERE may be little in a name, but there is often a great deal in a title, a fact understood by George Drysdale, director of the School of Architecture at Birmingham, England, when he recently read a paper at a meeting in that town. "Why Are Architects So Seldom Artists; or, Why Are Architects Not Always Artists?" was his title, and he knew what he was about when he chose it, for it is one sure to arrest attention and start the controversy that clears the air.

We rarely walk through the streets of a town or drive along country roads without asking ourselves the same question, at least semi-consciously. We see houses that are well built and skyscrapers that would not stand so securely unless learnedly designed. But it is the exception when either houses or skyscrapers move us by their beauty or awaken in us the keen pleasure we have in looking at a beautiful painting or listening to fine music; and we are not crying for the moon, not asking for the impossible, when we hope for the same pleasure from our modern buildings.

If we feel it before the Parthenon as before Wren's dome in London, in Chartres Cathedral as in St. Mark's at Venice; if a row of old timbered cottages in an English village, a simple inn in a French town, a chance doorway in a Spanish street, a Colonial house so far spared by the vandal will give it to us, why should we not expect it as a right from the building of the architect of today who has inherited the great traditions of the ages? And yet there is no use denying that, well equipped as he is, thorough as is the course of study through which he must now pass, his work does not often stir within us that sense of beauty which it is one of the chief ends of art to satisfy.

Mr. Drysdale explains the handicaps to the modern architect, of busy governing bodies and nagging by-laws, of hurry and economy, of competitions from which conventions grow. He sums up the difficulties, neatly tabulating them under the twelve chief points. But he suggests better the answer to his question when, in a few words, he says where the amateur wants sensation, the artist seeks emotion.

For, argue ingeniously as we may, it is this mysterious emotion, or genius, or the many things it can be and has been called, that is the very spirit of art, and without it the architect works in vain and only by courtesy can be called artist. It would be more to the purpose to consider what is wrong in the conditions of our modern life, civilized as we think it, that there should be so many architects, or, for that matter, so many painters, sculptors, engravers, and so few artists.

MAY PUT SIDEWALKS UNDER BUILDINGS

THE rate of traffic increase, according to Arthur S. Tuttle, chief engineer of the Board of Estimates and Apportionment of New York City, is conservatively about 15 per cent annually in congested areas, states *The American Contractor*.

Certainly, continuous construction of skyscrapers in such districts adds materially to the already overcrowded condition of the streets. Yet the halting of all such building is not going to stop the increasing density of traffic. More street space is urgently needed in all cities.

One remedy, which is of particular interest, has already been tried out in Philadelphia and is soon to be inaugurated in New York City. This proposal is to construct arcaded sidewalks by cutting in on the ground floor of a building and setting the sidewalk under shelter between the outside columns and the shortened store fronts. The space formerly taken up by sidewalks is to be turned to street use. This proposal has long been urged by E. J. Fitzpatrick, Chicago architect, but has not hitherto been accorded the attention it deserves.

In Philadelphia the east side of Fifteenth Street has been arcaded between Market and South Penn Square. It contains a sidewalk 19 feet wide under the front of all the buildings. No detraction from the business value of the buildings seems to have occurred; it seems, on the contrary, that the value has been enhanced.

The New York Telephone Company is voluntarily offering to construct a similar arcaded sidewalk under its proposed Vesey Street building in New York City.

Open arches between columns afford easy access to and from the street. Reconstruction work presents few structural difficulties because of the skeleton frame type of construction that is now in common use; and undercut work is far more economical than the setting back of entire buildings, the construction of subway sidewalks, etc. The wonder is that this system was not extensively tried out long ago.

The Shadow Chaser

The New Liggett Building, Madison Avenue and Forty-Second Street, New York. Installed with Ainsworth "Archer Model" MONAX. Carrere & Hastings and R. H. Shreve, Architects. Fred T. Ley & Company, Building Contractors.

"The Shadow Chaser"

MAKING your new building a better place in which to work or live depends on what you have done to lift dull shadows or eye-straining glare from its daily tenants. No plan is complete, no building efficiently lighted until you have written very definite specifications for illuminating glassware.

MONAX GLASS, "The Shadow Chaser" sprays light *uniformly* in all directions yet absorbs almost none of it. A beautiful commercial glass in a wide variety of designs.

Have your specification writer send for illustrated catalog and professional specification sheet in ready-to-file form.

MACBETH-EVANS GLASS COMPANY
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MONAX GLASS
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THE American Architect and the Architectural Review *has gratuitously set apart this section for use by The American Specification Institute. The Editors and Publishers assume no responsibility for any statements made, or opinions expressed.*

The purpose, simply stated, is to afford an organization which, it is believed, will become a most important element in architectural practice and building operations, a medium through which it may, without expense to itself, reach a class of readers that are most intimately identified with the field of the activities of The American Specification Institute.

Publishers, The American Architect and The Architectural Review.

TENTATIVE SPECIFICATIONS FOR INTERIOR MARBLE WORK

A. S. I. Bulletin No. 45

I. CONTRACT AND LEGAL

1. Parties.
2. Drawings.

   The drawings that will govern the work of this contract comprise the following:

   Schedule

   1.

   2.

   which may be supplemented by further detailed explanatory drawings.
3. Agreement.

   The form of agreement shall be that of the American Institute of Architects, known as Standard Form of Agreement between the Contractor and Owner—Stipulated Sum.
4. Terms of Payment.
5. General Conditions.

   The General Conditions of the Contract of the American Institute of Architects, which are attached to these specifications, apply to all contracts and form a part of and are included with these specifications for Interior Marble Work. Wherever the word "Architect" appears therein, it shall be understood in this contract to refer to..... or the Owner's representative on the work.
6. Regulations and Codes.
7. Standards.

II. ECONOMIC

8. Scope of Contract.

   8-1. Work Included.

   The work under this contract shall include all labor and material required for the furnishing and installation of all interior marble work entering into the construction and completion of the building in accordance with the drawings and these specifications.

   8-2. Work Not Included.

   The following work shall not be included in this contract.

   (a) The masonry backing and scratch coat of Portland cement plaster to receive marble wall linings.

   (b) The concrete base to receive marble floors. This base will be furnished by another contractor screeded to a level (state number) inches below the finished floor line.

   (c) Terrazzo Work.

   (d) (State other work not included.)
9. Methods of Analysis and Comparison of Bids.

   9-1. Methods.

   The bids submitted under this specification will be analyzed and compared strictly in accordance with the stipulations of the specifications regardless of the form or text of the bids.

   9-2. Basis.

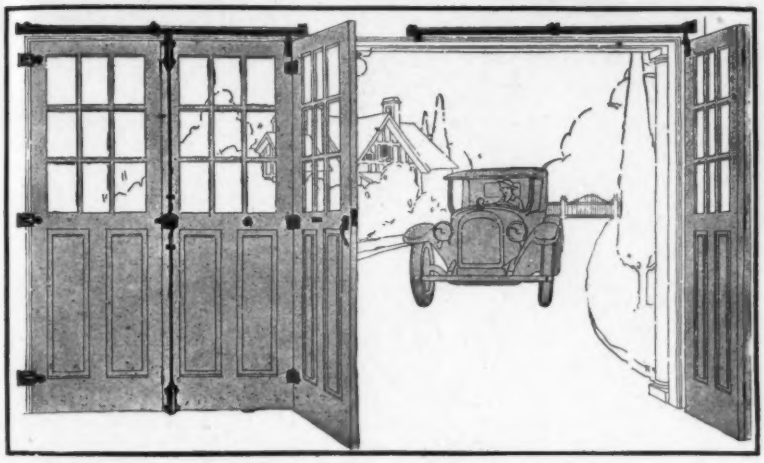
   The bids submitted for this work will be analyzed on a basis of:

   (a) Price.

   (b) Responsibility.

   (c) Service.

QVALITY LEAVES ITS IMPRINT



Sagging, sticking, slamming, warping—these are the evils which accompany the use of old-fashioned swinging garage doors.

Many Times the Life of Swinging Doors
Hang garage doors on *Slidetite* for long service

It stands to reason that even the strongest hinges can't long support the excessive weight of swinging garage doors. Sagging, sticking, warping and other attendant evils soon result. Only by hanging garage doors *from above* can long years of satisfactory service be assured.

Slidetite Garage Door Hardware

Before building another garage, or remodeling an old one, send for a copy of Catalog D 29. It contains many helpful suggestions and detail doorway plans for architects and builders. Slidetite is sold by leading hardware and lumber dealers everywhere.

supports garage doors in the only practical way. The doors are suspended from an overhead track, making sagging and sticking impossible.

Slidetite provides a doorway that can't be blocked by drifting snow, and by preventing slamming also does away with the danger of personal injury and damage to the car. The doors slide inside, away from snow and ice, and fold flat against the wall where the wind can't possibly get at them.

Slidetite equipped doors slide smoothly on their faultless track. A slight push opens or closes them. Yet they fit the opening snugly when closed, securely sealing the garage against the weather.

Time has proved *Slidetite* to be the only practical door-hanging system for openings of any width up to 30 feet. Even in openings of this extreme width, *Slidetite* provides a clear, postless entrance.

Exclusive manufacturers of "AiR-Way"—the original sliding-folding window hardware

New York
Boston
Philadelphia
Cleveland
Cincinnati
Indianapolis
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Richards-Wilcox Mfg. Co.
A Hanger for any Door that Slides
AURORA, ILLINOIS, U.S.A.
RICHARDS-WILCOX CANADIAN CO., LTD.
Winnipeg LONDON, ONT. Montreal

Chicago
Minneapolis
Omaha
Kansas City
Los Angeles
San Francisco
Seattle

(1132)

III. GENERAL DESCRIPTIVE

10. Water.

The source of water supply for building purposes will be provided on the site under another contract. The Contractor shall furnish his own local connection to plant, hose connections and receptacles required for providing an abundant supply of clean water.

IV. PRELIMINARY PREPARATION

11. Field Measurements.

The Contractor shall measure all existing work at the building and prepare the work under this contract in accordance with the measurements taken, calling the attention of the (Architect or Engineer) to any discrepancy between the work as built and the work as shown on the drawings.

12. Shop Drawings.

The Contractor shall prepare and submit, in duplicate, for approval of the (Architect or Engineer) all necessary shop and setting drawings showing all details of marble work. The (Architect or Engineer) will check the drawings only for design, contours and construction. No work shall be manufactured until the shop drawings are finally approved.

13. Models.

The Owner will provide all plaster models for the ornamented marble work. One unit of each ornament will be provided except for running ornament, for which eighteen inch long models will be furnished. All models will be made in (state location). The Contractor shall furnish to the modeler all necessary copies of his own shop drawings, after the (Architect or Engineer) has fixed all contours, and the Contractor shall provide the modeler with all dimensions required in determining the spacing of ornament, etc. The models will be delivered to the Contractor, at the modeler's studio, crated ready for shipment. The Contractor shall pay all charges for transportation of the models and shall care for the same until they are finally disposed of, as directed by the (Architect or Engineer). The models finally shall be delivered to the building by the Contractor, if the (Architect or Engineer) so directs, so that the finished work may be compared with them. Any deviations from the approved models shall result in the rejection of the work and new work shall be substituted therefor.

14. Samples.

Typical samples of each kind and grade of marble, as specified and proposed for use, shall be submitted to the (Architect or Engineer) for approval before any construction work is done under this contract. Each sample shall be marked with the name of the manufacturer and the grade of the marble.

V. MATERIALS

15. Cement and Mortar.

All setting mortar shall be composed of one part stainless white cement to one part white sand. All sand concrete fill shall be composed of one part Standard Portland cement to three parts sand. Portland cement shall conform to the latest Standard Specifications and Tests for Portland Cement, (Serial Designation C 9-21) of the American Society for Testing Materials. All sand shall be graded from fine to coarse as required to accomplish the intended purposes.

16. Plaster of Paris.

All plaster of Paris shall be thoroughly calcined gypsum, finely ground and entirely free from lumps.

17. Anchors.

All anchors shall be formed from soft brass, copper or aluminum wire..

18. Marble.

All marble shall be sound and free from spalls, seams, shakes, sand holes or other defects that impair its strength, durability or appearance. Fragile marble shall be backed or lined with a strong marble or with slate. Patching will be permitted only where the natural imperfections of a particular marble are subject to correction by the established usage of the industry. All vertical work in any room or space shall be of the same color, veining, etc.

19. Sizes of Marble.

Marble shall be of thickness and sizes shown except that for work requiring it correct dimensions shall be obtained from work to which or against which it is to be applied. Unless otherwise shown, sizes of all marble shall be as follows: Stair treads, risers and platforms each shall be in one piece; treads and platforms shall be (1¼) inches thick; risers shall be (⅞) inch thick; floor tile shall be of pieces approximately ..... inches and ..... inches thick; base shall be (1¼) inches thick by the height indicated; wall lining and similar vertical work shall be (⅞) inch thick; toilet partitions shall be (1⅛) inches thick with cap (1¼) inches thick and fronts (1¾) inches thick. All vertical marble shall extend about one inch below finished levels of intersecting surfaces unless conditions prohibit this.

20. Hardware.

All finish hardware indicated in connection with marble work will be furnished and set by others. This Contractor shall prepare marble work with holes of proper size and location to receive spring hinges, door bumpers, paper holders, door bolts and other items. Angle anchors, supports and similar hardware necessary for the fabrication of the work shall be (white bronze or nickel-plated brass) furnished by the Contractor.

VI. DESIGN AND CONSTRUCTION

21. Distribution of Marbles.

(Note: Specify distribution of each of the various marbles by location—in schedule form.)

22. Design.

All marble work shall be made in accordance with the (Architect's or Engineer's) details and the shop drawings. Joints shall be made on the side least exposed to view. All external angles and all exposed edges and corners shall be slightly rounded, unless otherwise shown or specified. All mouldings shall be cut to conform exactly with the (Architect's or Engineer's) full size details.

23. Cutting and Fitting.

23-1. Carving.

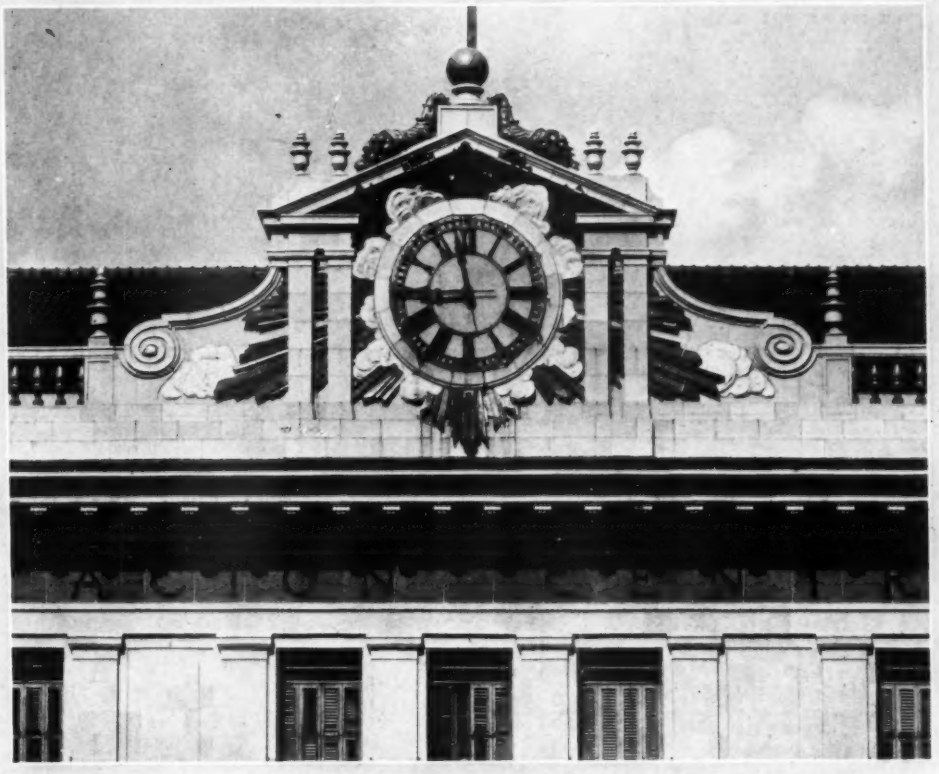
Carving shall be done by artisans skilled in the best clsas of such work. Carving shall be crisp and spirited in character and execution, and replicas of the models as delivered to the Contractor. Photographs of the executed work shall be sent to the (Architect or Engineer) before it is shipped to the building. Any deviation from the models shall result in the rejection of the work and new work shall be substituted therefor.

23-2. For Installation.

All necessary cutting and fitting of the work shall be done at the time of installation as may be required by existing conditions to permit proper installation of the marble, to accommodate work which is to be installed, or for the assistance of other contractors. Drill all holes for the hardware for toilet fixtures in toilet rooms, to receive heating, plumbing, electric and other pipes and conduits, or as may be required otherwise. Samples or drilling templates will be furnished to the Contractor and this work shall not be done except under approval and instructions of the (Architect or Engineer). All cutting and fitting shall be executed in a neat manner and so as not to show raw edges after installation of items requiring such cutting and fitting.

23-3. Mouldings.

All mouldings shall be cut to conform exactly to the profiles shown on the full size details, and all



Central motif crowning main facade of the Union Station,
Havana, Cuba. Kenneth M. Murchison, Architect.

GOLD GLAZED TERRA COTTA

Gold glaze gives the culminating touch of splendor to the use of Polychrome Terra Cotta throughout the exterior of Havana's great terminal.

Associated with blue, white and yellow on a cream ground the use of gold glaze extends throughout the parapet balustrade and other detail reaching its climax in the sun burst framing the clock dial.

The enduring result attainable in actually fired glazes will commend itself over the ordinary forms of applied gilding or the use of impermanent substitutes for attaining gold effects in connection with polychrome coloring.

For specifications and literature pertaining to use of color address

NATIONAL TERRA COTTA SOCIETY

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arrises shall be straight and sharp to obtain perfect joints and lines. Perfect continuity of lines and mouldings will be required so that they will run continuously from piece to piece. Chamfering of arrises will not be permitted, unless indicated on the drawings.

23-4. Joints.
All joints shall be hair-line joints, with edges or arrises absolutely parallel. All joints shall be arranged symmetrically, and they shall be straight and in the same planes.

24. Finish.
All exposed surfaces of floors, treads, platforms and thresholds shall be (sand rubbed) finish. The exposed surfaces of all vertical marble shall be (highly polished or satin) finish. Finished surfaces shall be free from scratches or other defects and upon completion shall be left in condition acceptable to the (Architect or Engineer).

25. Storage of Materials.
All marble shall be stored within the building and shall be well protected against stains or damage of any kind whatever. The marble shall be stacked in spaces as directed by the (Architect or Engineer) so as not to form a heavy concentrated load on small areas.

26. Installation of Work.
Marble shall be installed substantially. Backs of marble set against concrete shall be protected with a damp-resisting paint. Absolute continuity of mouldings, arrises and lines shall be obtained in the fabrication and setting of the marble, and joints forming breaks in continuity shall be re-set in a proper manner.

26-1. Setting Floor Marble.
Marble floors shall be laid on the concrete slabs furnished by others. Mortar used for bedding marble floor work shall be non-staining white cement mortar as specified. Joints shall be uniform in width and shall not exceed (1-16) inch. Spaces shall be evenly divided to avoid any cutting of tile between lines of vertical surfaces. The marble shall be bedded solid and rubbed to a flush and perfectly level surface. Marble base shall be provided where indicated. Marble plinths shall be provided under the casings of all doors where marble floors occur.

26-2. Setting Stair Marble.
Marble treads and platforms shall be laid on (steel or concrete) construction as indicated, extending over face of risers ¾ inch forming moulded nosing. On steel construction marble treads and platforms shall be secured to the lugs using, where required, brass screws or dowels. Where marble risers occur the treads shall be dowelled to the risers back and front with at least two brass dowels at each joint. Each platform shall be laid in a single slab unless size is too great. Where door openings occur the marble shall extend into same, jointed on face of wall. Treads shall be set to incline (⅛) inch from front to back and platforms shall be set level. Marble base for steps shall be cut to fit the treads and risers.

26-3. Setting Marble Partitions and Wall Linings.
Marble partitions, wainscoting and wall lining shall be installed in one piece full height from base to top. Partitions, wainscots and wall linings shall be secured together with rabeted and mortised joints held with dowels, anchors, toggle bolts and plaster of Paris.

26-4. Anchoring.
Marble which must be installed against steel or iron shall be protected from rust stains in an effective manner, as approved by the (Architect or Engineer). All anchorages which may be attached to steel or iron surfaces shall extend in upward direction from the metal to the marble, in order to prevent travel of moisture to the marble, and the anchorage shall be encased completely in setting plaster. All necessary drilling of metal work to which anchors are to be attached shall be done by the Contractor.

27. Protection and Cleaning.
All marble work shall be carefully protected from all damage during progress of the work and on completion shall be cleaned thoroughly and left in first-class condition.

VII. SCHEDULES

VIII. RESULTS

28. Inspection and Performance.

29. Guarantee.
The Contractor shall guarantee all workmanship and material against defects for a period of one year after final acceptance of the work and he shall replace and make good all defective workmanship or material appearing within this period.

30. Rejection.

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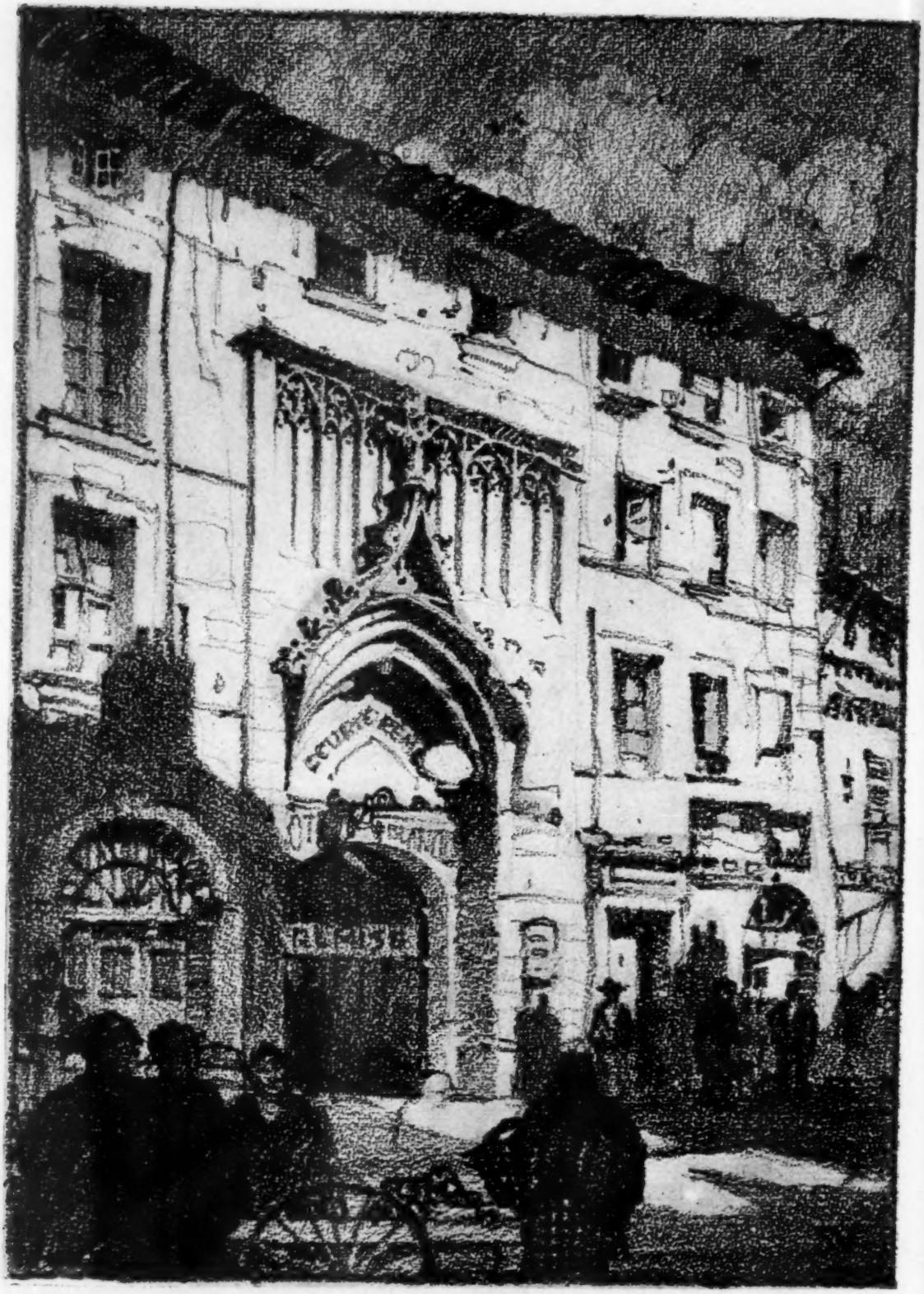

THE PALACE OF THE POPES AND THE CATHEDRAL, AVIGNON

(From the original sketch by Samuel Chamberlain)